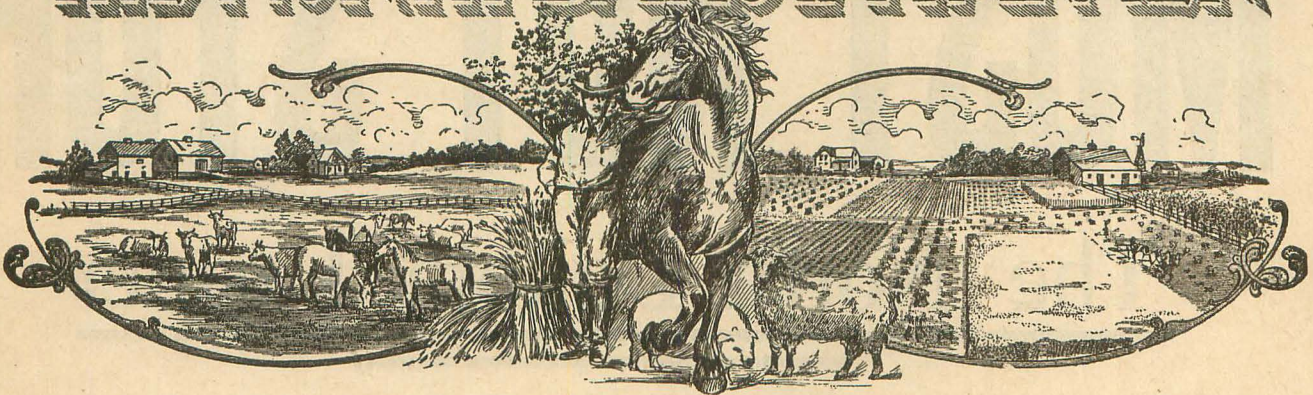


Shall Our Farmers' Institutes Stop? See Next Page

THE NORTH DAKOTA FARMER



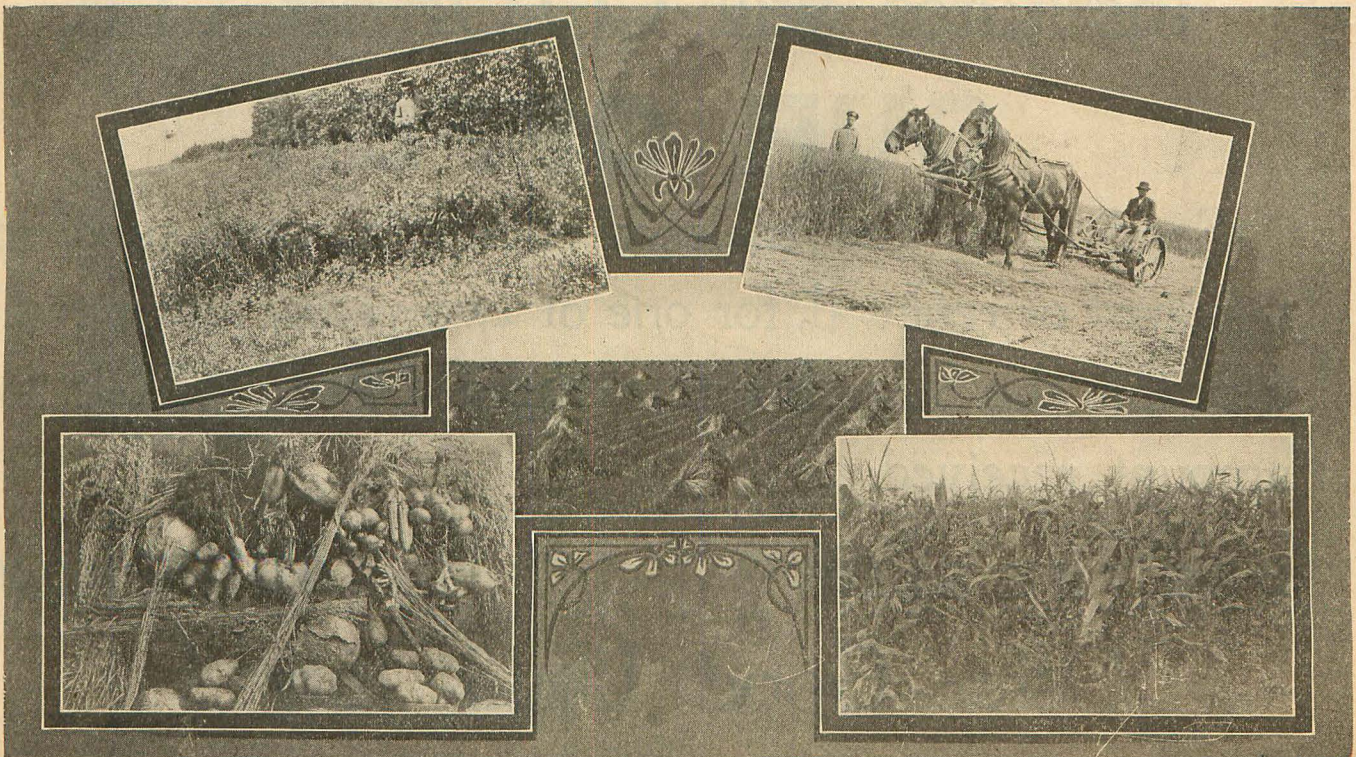
"THE NORTH DAKOTA FARMER FOR NORTH DAKOTA FARMERS"

Vol. 12 · No. 11

Lisbon, North Dakota, May 15, 1911

50 Cents A Year

RENVILLE COUNTY



Products of Renville County

978.4
N814
Graham

The FARMERS INSTITUTES OF NORTH DAKOTA

MUST NOT STOP

The North Dakota Farmer

Is willing to do its part, if those
MOST INTERESTED in the
Institutes will **CO-OPERATE.**

OUR OFFER

Send to us the enclosed slip with your subscrip-
tion, new or renewal, for one or two years, and we will
turn into the State Institute Fund **ONE HALF** the
amount received.

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NORTH DAKOTA FARMER

LISBON, N. DAK.

THE NORTH DAKOTA FARMER

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LISBON N. D., MAY 15, 1911

50 Cents a Year

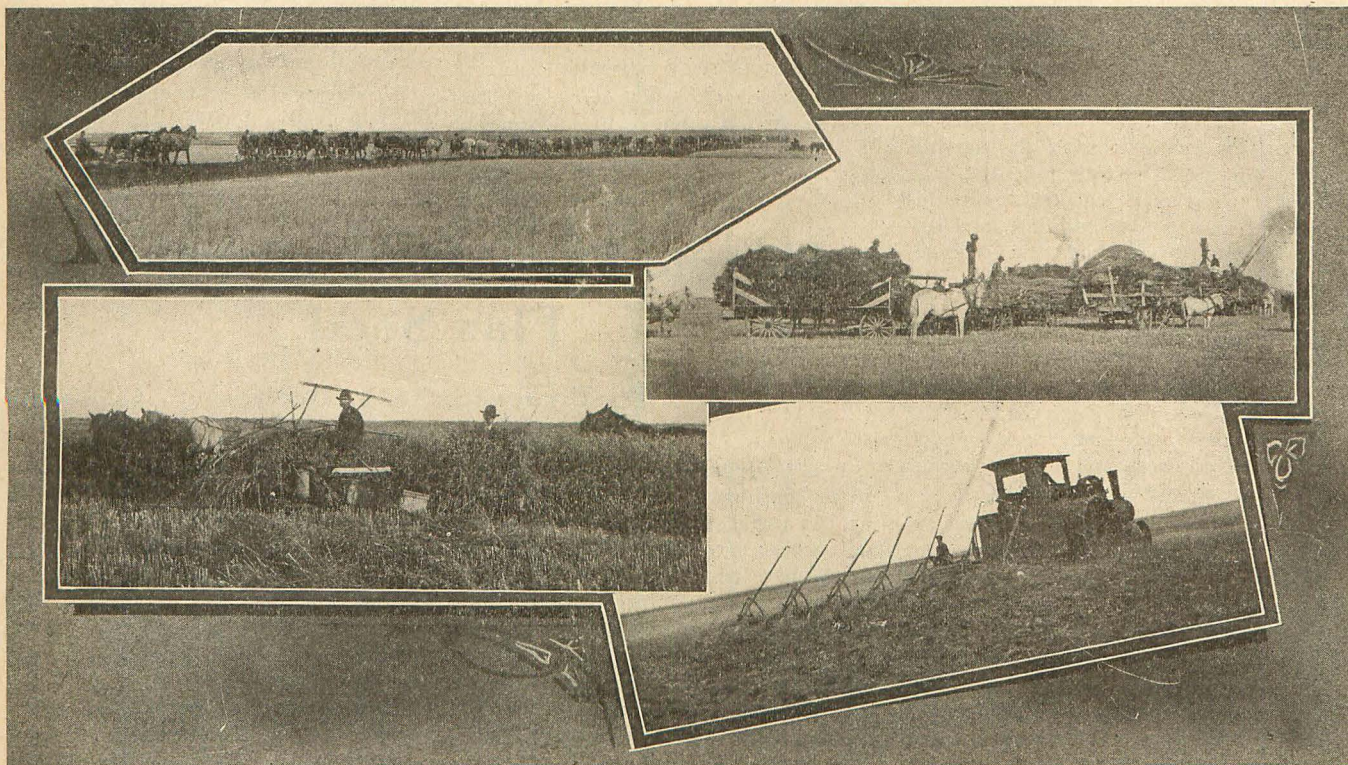
GOOD ROADS

By R. M. Dolve, Ass't Prof. of Agri. Engineering

The economic importance of good roads appears to me to be so apparent and selfevident that to anyone who has given the road question any thought a discussion of this subject must seem the mere rehearsal of familiar truisms. Nevertheless, as long as our roads are the poorest in Christendom the good road enthusiast may be pardoned for

have been built, the advance has been largely educational, and but little has been accomplished in the actual construction of better roads. So far it has been a comparatively easy task to interest a few people in this question but no far-reaching results can be looked for until the majority of the people become enthused and thoro-

accomplished for the betterment of roads is that a majority of the people remain indifferent to the subject because they deem it of direct importance to the farmer alone and are consequently content to leave to him the onus of road building. This is a grave mistake for it may be shown that people in every walk of life are interested, pecuniarily, at least, in the condition of our country roads. It has been conservatively deduced from governmental statistics that the cost of living is 10 per cent higher because of the toil exacted by poor roads thru the high cost of marketing food products and the raw materials for clothing and other



Farm Scenes in Renville County, near Mohall.

so constantly endeavoring to call the attention of the American people to this subject. During the past decade the good roads propaganda has made rapid strides and many of the foremost men in the country have enlisted their influence and support in its behalf. Altho many miles of good roads

ly alive to the importance of the subject. Then, and then only, will it be possible to secure thru concerted action the enactment of better road laws by which the road laws may be more efficiently extended and national, state and county aid secured.

One reason why more has not been

necessities. Aside from this, anything conducive to the prosperity and welfare of the rural population means greater prosperity for the city and country town population who are directly dependent upon the farmer, who is the only actual producer of wealth. This axiom will, during the interim until the next

crop is harvested, be firmly impressed upon the understanding of many a country store merchant located in sections of our state where last year's crop was a failure. The merchants of small towns are jealous of the infringement of mail-order houses upon their business but if they want the business of their community let them help build the roads from the farmer's place of business to theirs. If these men were given to understand that they had a choice between good roads and the parcels post they would immediately become enthusiastic advocates for better roads and would readily lend their aid toward securing state and national aid.

The Farmer's Right

The farmer has a right, both moral and legal, to receive state and national aid in the building of his roads. He already pays an unjust proportion of the taxes. His property is largely of such a nature that he can neither hide it nor conceal its value and, when the assessor comes around, it has to be said, even the pigs squeal as the determined not to be overlooked. On the other hand it is a well-known fact that a large percentage of city and corporation property escapes taxation. Then too, do not cities profit from public improvements out of proportion to the amount of taxes they pay? Look at Fargo, for example, with the agricultural college, the state fair, the Cass county courthouse, the federal building and many other buildings and improvements from which the city secures revenue vastly greater than the taxes paid by its citizens for the support of these institutions and improvements. Being recipients of these special privileges why should they not in turn, by a system of state aid, help the farmers build adequate roads which would be of great and lasting benefit to the city as well as the country?

The national government has expended millions upon the improvement of harbors, rivers, canals, and other waterways; it has given millions upon millions of dollars worth of land to private corporations for the building of railroads but it has been conspicuously parsimonious in aiding the building of public highways. The result is that we have the finest steamships, the best harbors and the most efficient railroad service in the world, but our public roads are incomparably poorer than those of the least civilized country of Europe. The state is taxing its entire population for the support of educational institutions that are of direct benefit only to the few who take advantage of those schools and yet we all admit that the state is more than justified in making this expenditure.

The expenditure of money secured thru county, state and national aid for the improvement of our country roads is equally justifiable and can be defended:

1. On the ground of justice to the people in the country who are not receiving their full share of benefits from the expenditure of most public money.

2. Because it would effect a reduction of 10 per cent in the cost of living and otherwise benefit people who do not live in the country.

3. The future of the country demands that the comforts of country life shall, as far as possible, equal those of city life.

Not Expenditure Question

It is sometimes thought that the building and maintaining of good roads will necessitate the expenditure of vast sums of money, but such is not the case. It is not a question of any new expenditure. The expenditure is being made now. It is a question of economy. It is a question, not of throwing money away, but of saving the incalculable loss that the country yearly sustains thru the low efficiency of its roads and of increasing the value of farm property by making markets more easily accessible.

Everyone will readily agree with the statement that good roads would greatly

increase the market value of farm lands. If this were not so, then, why do farms near towns where the roads are not good, invariably sell at a much higher price than those at a distance? Good roads would tend to equalize this difference and I believe that uniformly good roads would increase the value of farm land by an average of at least \$1 per acre throughout the entire farming section of our state.

The profit from a farm, as well as from every other line of business, is the difference between the cost of production and the selling price. If the cost of marketing is too great to leave a fair margin of profit, the land will command a meagre price and its cultivation will be unprofitable regardless of its fertility. In some parts of our country, timber is considered an incumbrance on the land, potatoes rot in the ground and fruit on the trees while in other sections these commodities are so high priced as to be beyond the reach of most people and all because the cost of transportation does not permit the producer to transport them to the markets at a price which the consumer can pay. The question of roads is, therefore, a vital one and is of practical importance as the only way of reducing the cost of reaching the market and thus increasing the profits.

How to Raise More and Better Flax Seed

By Professor H. L. Bolley

It is becoming apparent that there is to be considerable difficulty in keeping up the world's supply of linseed products unless new methods are practiced in the care and cultivation of the flax crop. It has apparently been the custom of farmers to rely upon new lands for the production of flax. However, within late years the demand for linseed has become so enormous that the seed which comes from new land areas is insufficient. The building of enormous buildings, the extensive construction of modern homes, of machinery, etc., call for supplies which have slight parallel in previous years of construction. It is not probable that there will ever be found a reasonably good substitute for linseed oil; and the by-products of the crop are recognized as of even greater value than the oil. In all countries, except only the United States, linseed cake is considered as having the highest

merit for stock feed and, as land becomes high-priced, there can be slight doubt but this valuable product will be largely used in this country.

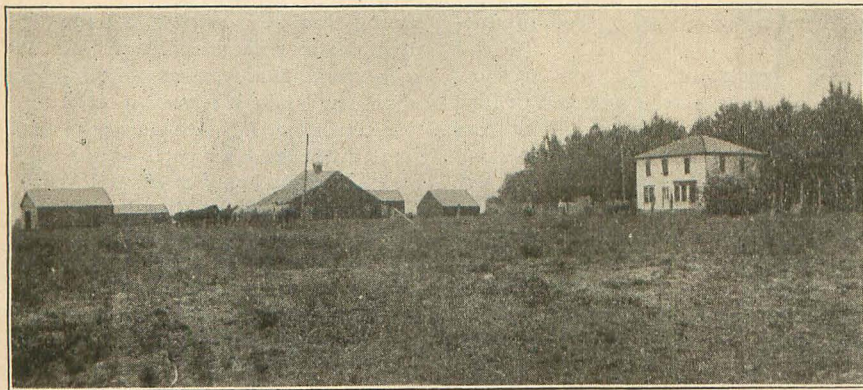
It is evident from these considerations that there will be annually a call for a very much larger supply of flax seed than the world has ever previously produced.

Diseases of the Crop. Studies conducted at the North Dakota Experiment Station have clearly demonstrated that the reason why the crop has always of necessity been grown upon new lands rests not in any peculiar use of soil fertility by the flax crop but is due to parasitic diseases which are conveyed to the soil by spores carried on the seed. The diseases are further distributed by various types of farming implements and are wind and water borne from old areas. Thus, as the crop tends to become more general

larger and larger areas of ground become infected until the region which once produced the crop can no longer produce it remuneratively. These features have led the farming public to believe that the crop is hard on the land, and, when the farmers have once ceased to grow it in a particular state or country, they have not taken up with it

selected until only approximately perfect seeds remain, blowing or screening out all bits of straw, chaff and dust possible.

5. Seed Disinfection—treatment of the seed by formaldehyde solution in such manner as to destroy all germs of flax diseases that may rest on or be sticking to the individual seeds.



Home of A. Steenson, near Hillsboro, Traill County

again. Thus the present seed supply is coming almost wholly from the small amount of seed which is furnished by the fiber crop plus that which is grown upon new lands.

The Crop Must be Grown on Old Lands as Well as New. It is evident that the time must soon come when the supply of linseed will be much less than it is, unless farmers can learn to grow the crop on old lands. The writer, thru his experiments and observations, is convinced that old farming lands will produce as good a crop of seed flax as can be grown upon the virgin soils but that the methods of working and caring for the ground must be different from the careless methods used on new lands. It is these same methods of handling the seed and of caring for the crop that have so speedily reduced the value of new lands for the production of the crop.

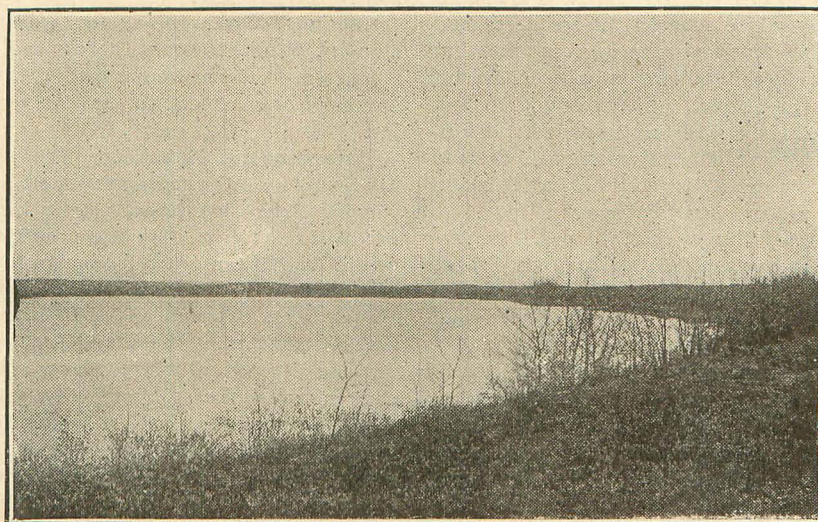
Improve the Quality and Variety of Seed. The fact is that no proper attention has been paid to seed selection, seed grading and seed breeding. "Any flax seed does for sowing" has been the rule, with the result that all of the various weeds and diseases which accompany the flax crop are immediately placed into the new lands. If the flax crop is to become profitable, all this must change for modern methods of cropping. The essentials of such methods may be stated as follows:

1. Proper preparation of a firm seed bed.
2. Selection of a good strain or variety of seed.
3. Selection of seed of full strength, free from internal diseases.
4. Grading the seed which has been

6. Sowing the seed at essentially the proper date.

7. Drilling the seed at the proper depth.

8. Pulling or in other manner destroying scattering weeds in the crop, the seeds of which are difficult to remove from flax seed after it is thrashed, as for example, mustard, false flax, French weed.



Site of State Tuberculosis Sanitarium, near Dunseith

9. Harvesting the crop at the right date so that the seeds will be mature and plump, but not lost thru shelling or injured by weather.

10. Cut it with a binder wherever possible.

11. Thrash it at the first opportunity after the boles become dry.

12. Previous to harvesting, select the

portion of the field which is most evenly ripe, harvest, thrash and save it for your own seed and for seed for selling to others.

13. Store the seed so that it shall remain dry and cool.

14. Conduct a decent, long series of rotation on your farm. Do not think of sowing flax more often than once in five to seven years on the same land.

15. At least one well-cultivated crop, and one crop of hay and pasture should intervene between flax crops.

16. In using barnyard manures never use any uncomposted manure which has been made out of flax straw or by animals who have been fed flax screenings.

17. All growers should observe these rules, for an infectious disease is a community affair.

Use the Fanning Mill. In order to arrive at the above essentials, the first great step is to procure good, bright plump flax seed and use the fanning mill so as to thoroly clean the seed, removing everything but the plumpest, brightest-colored seed.

Improve Varieties. As quickly as possible procure a variety or strain which is known to be a good yielder in your own community. Such a variety should in its pedigree date back to an individual plant of good strong yielding qualities. A mixture of the different strains and varieties of flax seed can never be relied upon to produce even ripening and a proper grade of seed. A

pure variety originating in a single strain may be relied upon to give an even ripening crop under proper culture conditions.

Test Your Seed. For those who have done the work of selecting, grading and curing their seed properly, there will be no need of testing it, but for those who are careless and who think

that any seed will do, a good rule is to test the seed and see if it will grow. Seeds which will not grow are not only a loss in themselves but injurious to the land, for, if they have not been injured by moisture or temperature the reason they do not grow is that they contain disease producing fungi which kill the young plants. Any seed which shows up mouldy in the germination pan should never be sowed on the land.

Crop Rotation. Different kinds of land demand different kinds of crops, and different kinds of farmers make success of different sorts of rotation, but it is certain that a good crop rotation should be practiced. Our experiments show that it makes considerable difference what this rotation is. No ordinary rotation will prevent the introduction of disease, if flax crop follows flax crop much oftener than once in five years. Flax does particularly well on properly cultivated corn ground and has a great partiality for sod lands, and should either follow grass and pasture lands or corn or other cultivated crop. In the case of the corn or cultivated crop, the good results come from the thorough packing which the ground receives the previous year, due to the tramping of the horses and the persistent shallow cultivation. The ground should not be plowed or worked deeper than it was worked during the corn cultivation period. On the sod lands the plowing should be as deep as possible and yet have the furrows lie over flat. If possible, before the sod is plowed it should be thoroughly disked on the surface ahead of the plow to loosen up some fine dirt to make the connection between the sod and the sub-soil. After plowing, the sod should be disked and harrowed and sub-surface packed until it is certain there is a good connection established between the sub-soil and the furrow slices.

Preparation of the Seed Bed. In preparing the seed-bed for flax every effort should be made to make it as firm and as shallow as possible, leaving only enough mulch to cover the seed so that the drill working at about one-half to three-fourths of an inch deep will strike moist, firm earth. This means that the previous cultivation should be such as to conserve the moisture. Flax can stand lots of punishment and can produce a crop of seed with perhaps less rainfall than any other of the small grains, provided it can first get well-rooted in a moist, firm seed bed.

When to Sow. Sow as early in the spring as possible yet avoid having the young plants frosted so that the crop may ripen before the hottest days of summer, or else, in the warmer regions, sow sufficiently late that the maturing processes may take place in the cooler autumn months and yet avoid frost in the fall. Excellent crops are raised un-

der both conditions but the crop is never very successfully grown when the crop must do its main developing during the hottest weather.

Rate of Seeding. For seed production, sow not to exceed fourteen quarts of good flax seed on any soil. If all the seeds grow, sixteen to eighteen pounds will give plenty of plants on a properly prepared seed bed. They will be sturdier and give better seed production.

Seed Treatment. No matter how hard one works on the seed bed or how carefully he selects the seed, if he does not disinfect the seed before planting, the work will be largely lost, for in a few years the ground will become infected so that, regardless of good methods, a crop cannot grow.

Treatment. Treat the seed with formaldehyde; using standard formaldehyde at the rate of sixteen ounces avoirdupois to forty gallons of water. Use a spray pump which will throw a forceful misty spray. After the seed is all cleaned in the fanning mill, throw it down on a tight floor or canvas and rake or shovel it over while it is being sprayed with the solution. Rake, spray and shovel slowly until you have put on at least one-half gallon of solution for each dry bushel of seed. Pile the seed up in a pile, cover with a canvas and it will be right to sow in approximately two hours. Treat in the morning that which you wish to sow in the afternoon. Treat in the afternoon what you wish to sow in the morning.

Caution. While the flax seed is being sprayed, be sure to stir it thoroughly and, if it happens that you cannot seed it, then it must be spread out to prevent heating.

Harvesting and Thrashing. The crop in dry regions often grows very short but this is no sign that there is not a large production of seed. The flax crop may readily be but ten or twelve inches high and yet produce fifteen to twenty bushels per acre. This means that careful arrangements must be made for harvesting. In regions where there is sufficient moisture the crop will grow sufficiently tall to be cut with a binder and this is then the proper method, for the bundles can be stood erect so as to avoid moisture on the seed boles. It will thus be ready to thrash within two or three days after being cut, avoiding chance of injury by rainfall. If the crop is short, it is usually cut by means of a reaper which throws the bundles of flax to one side where they should be gathered up as soon as dry and thrashed. The habit of leaving these bundles lying on the ground for several weeks to mould is one of the most destructive processes in flax growing, filling the seed coats with disease producing fungi, eventually resulting in thoroughly infecting the ground

with diseases from the mouldy straw. Any flax seed which has once been mouldy in the bundle should never be used for sowing purposes.

Flax Seed as Forage. In the Northwest the flax straw is commonly used as rough feed for cattle during the winter. Many farmers report great success in using it in combination with other straws and hay. Some few cases of stock poisoning have been attributed to feeding upon flax screenings and flax chaff. As such crops, however, are often grown upon new lands, it is very possible that this poisoning is due to the presence of some of the seeds or parts of poisonous plants such as hemlock or pink cockle. Flax seed is a quick acting laxative and a part of these troubles may readily be due to eating the seed in too large quantities after a steady diet of dry wheat straw, etc.. As indicated under the paragraph on essentials, when cattle are fed flax straw, the manure should never be used for fertilizing purposes until it is thoroughly composted. To spread such manure while fresh, not composted, upon lands intended for flax culture, is a sure means of destroying the crop.

MOISTURE AND HUMUS

Prof. J. H. Shepperd at the Dickinson Dry Farming Congress

The retaining of fertility, the destruction of insects and noxious weeds, the adding of humus, retaining of moisture and the keeping clear of plant diseases are commonly mentioned as the essential items of good resulting from crop rotation all of which may be applied to a limited extent in this part of North Dakota. They apply to a less extent, however, than they do to regions of heavier rainfall as less fertility is carried away by washing of rain over the surface or by the water which seeps into the ground to great depths. Insects will probably not be as severe in this part of the state as in more humid countries as they have less opportunity to protect themselves during the hard seasons of the year.

Moisture and humus are essential here even more than in almost any other portion of the country. Moisture comes up by means of capillarity to the bottom of the furrow and then stops and will not pass into the furrow slice unless some special means is taken to press them together. Moisture must be given a chance to move to the portion of the soil where you want it if your crops are to do well. The furrow slice must be put in close contact with the bottom of the furrow so as to let the moisture pass by and that the surface must be kept covered with a loose mulch to prevent the moisture from passing away entirely and

from thus being lost in the air.

Humus which is partially decayed vegetable matter in a soil holds moisture like a sponge. The man who grows corn, potatoes and root crops to produce a soil mulch which will hold the moisture for his future crops will be obliged to keep livestock of some sort to market these products thru. This will result in a considerable amount of stable manure to be applied to his land and that makes one of the best forms of humus material if applied after it is well rotted and will have the effect of helping the land to withstand the dry spells when they come.

SPECIAL "MINE RESCUE" CAR

Teaches First Aid to Injured in Mine Accidents

Thru a joint arrangement between the newly established government Bureau of Mines and the Northern Pacific railway, one of the six new mine-rescue cars, equipped for first aid to the injured in mine disasters, rescue work, combating mine fires and prevention of mine catastrophes, will be sent into the Northwest. It will be in charge of a mine expert and four assistants from the government bureau, and will be transported free over Northern Pacific lines to meet the demands for its services. While not employed on rescue work and in the saving of life, the car will operate as a traveling school for the instruction of mine employes in new methods of first aid, preventing mine accidents and other facts valuable to them in meeting conditions arising from accidents, injuries, fires and disasters.

The new rescue cars were built for the government by the Pullman Company and are being distributed over the country in order that they may be held at locations adjacent to mining districts, ready for emergency calls. They are of the most modern type and the equipment with which they have been supplied embraces every device known to expert mine rescue authorities for the saving of life. The car allotted to Northern Pacific territory will be located at Billings, Montana, which is a central point from which to read the Montana bituminous coal fields. Billings is also the junction of the Northern Pacific and Burlington lines, and the latter railway will join in handling the car and its staff between its new headquarters and points on that line in the southeastern Montana coal district.

The cars are provided with several sets of the latest Draeger oxygen helmets, necessary for entering places where the oxygen in the air has been used up. Besides supplying oxygen to the wearer of the helmet an apparatus is attached

for the resuscitation of the overcome miner. It is a scientific method of forcing the lungs into artificial respiration. The lungs are filled with artificial air and the waste coming from the lungs is absorbed in a can of chemicals which is fastened to the pump.

These cars are about 70 feet long and have been arranged after a plan worked out by the Bureau of Mines and the Pullman company to make them the most efficient for the work they are expected to do. The cars are provided with sleeping and cooking quarters and cooks. The experts will live in the cars, and will thus be ready at all times for any emergency that may arise.

When the car is not engaged in actual mine-rescue work it will be used in demonstrating methods of prevention and rescue, so that in case of accident and before the car reaches the point of disaster, effective first aid may be rendered by those on the ground.

In performing this educational work it is proposed to take this car from one coal mining camp to another in the territory mentioned. The car will remain at each camp from one to three weeks as conditions may require, and during this time the men in charge will use both the car and the neighboring mines in training young, selected miners and mine foremen in the use of mine-rescue equipment, and in mine-rescue methods in general. The experts in charge of the car will also give lectures to the miners, illustrating the methods of preventing mine disasters and of procedure necessary in case of disaster.

A. C. BULLETINS

A line of information that has been of inestimable value to the public of the state are the bulletins issued from time to time by the agricultural college at Fargo. The publicity department of the A. C. has sent the following list of bulletins which are available to the public:

No.

14. Tuberculosis.
15. Chemical Composition of Foods.
21. Cleanliness in Handling Milk.
23. Grain and Forage Crops.
24. North Dakota Soils.
26. Feeding of Millet to Horses.
42. Field Notes of Horticultural Department.
49. Some Points on Fruit Culture.
51. Corn Culture.
52. Length of Growing Season in North Dakota.
54. Abortion in Cattle.
55. Flax and Flax Seed Selection.
56. Noxious Weeds and How to Kill Them.
57. Some Food Products and Food Adulteration.

58. Some Stock Poisoning Plants of North Dakota.
60. Analysis of Formaldehyde Sold in North Dakota.
61. Scabies in Sheep and Cattle and Mange in Horses.
62. Weed Studies.
63. Adulterated Food Products and Food Studies.
64. Root Systems of Field Crops.
65. Experiments in Clover Growing. Trials with Alfalfa.
68. Rust Problems. Facts, Observations and Theories. Possible Means of Control.
70. Paints and Their Compositions.
71. Flax Culture.
73. Fattening Steers on Barley and Rejected Wheat.

Why Rent a Farm

and be compelled to pay to your landlord most of your hard-earned profits? Own your own farm. Secure a Free Homestead in Manitoba, Saskatchewan or Alberta, or purchase land in one of these districts and bank a profit of \$10.00 or \$12.00 an acre every year. Land purchased three years ago at \$10.00 an acre has recently changed hands at \$25.00 an acre. The crops grown on these lands warrant the advance. You can

Become Rich

by cattle raising, dairying, mixed farming and grain growing in the provinces of Manitoba, Saskatchewan and Alberta in Western Canada. Free homestead and pre-emption areas, as well as land held by railway and land companies, will provide homes for millions. Adaptable soil, healthful climate, splendid schools and churches and good railways. For settlers' rates, descriptive literature "Last Best West," how to reach the country and other particulars, write to Sup't of Immigration, Ottawa, Canada, or to the Canadian Gov't Agent.

Chas. Pilling
Grand Forks, N. D.



The Right Paint For This Spring

You can't afford to let your house stand exposed till oil drops in price. The way things look now, the buildings would be paint-hungry before that time comes.

Get the cost of 100 pounds "Dutch Boy Painter" White Lead, 4 gallons pure linseed oil, 1 gallon turpentine, 1 pint turpentine drier—this makes 8 gallons of pure white lead paint. Divide by 8 for the price per gallon and compare this with the price of any other paint you'd think of using.

You'll find that the best is the cheapest; also that, after all, the increase in the cost of "Dutch Boy Painter" White Lead made-to-order paint is trifling.

Write for our free "Helps No. 438
It answers all paint questions.

NATIONAL LEAD COMPANY

An office in each of the following cities:

New York Boston Buffalo Cincinnati Chicago
Cleveland St. Louis San Francisco
(John T. Lewis & Bros. Company, Philadelphia)
(National Lead & Oil Company, Pittsburgh)

Kill-Em-Quick Gopher Poison Saved \$100 for This Man Last Year

After all the surest proof, for you, of the value of Mickelson's Kill-Em-Quick Gopher Poison is the testimony of your brother farmers. Here is a sample of the letters I receive every week. O. C. Strassheim, of Turtle Lake, N. D., writes: "I used your Kill-Em-Quick Gopher Poison on my farm, and at the present time a live gopher could not be found on it. I know that it has the old strychnine beat in a hundred ways. I know that it has benefitted me to the extent of \$100.00."



Yet you cannot hope to reap 100% crops if you allow gophers and other field pests to feast upon the seed and tender shoots of grain.

What Gophers Cost

After many years of careful experimenting and testing, I have found, and proved to thousands, that every single gopher costs at least 10c to keep. And that there are from 500 to 1,000 gophers in a 40 acre infested field—and that every pair of gophers raise from 20 to 30 more each season.

Mickelson's

Kill-Em-Quick

is the simplest, surest, quickest and most economical Gopher Poison. Simply soak the grain over night—drain water off and mix with Kill-Em-Quick which adheres to the grain—so it comes into immediate contact with the stomach tissues of gophers, causing death instantly. Its peculiar odor attracts gophers. They can't resist it—and they eat it in preference to the tender shoots or the seed, and the poison is so strong that the merest atom kills a gopher. A \$1.25

On many farms gophers cause more damage than rust or hail. On all infested farms, gophers are a serious problem. You should rid your fields of every gopher. You may plow and harrow and sow and cultivate with exceeding care. You may select the best seed. You may farm scientifically and intensively in every way.

box of Kill-Em-Quick will kill 4,000 gophers. As each gopher costs you fully 10c, one box of Kill-Em-Quick means \$400.00 in increased crops.

Don't Use Strychnine

An ounce of strychnine, which should sell for \$1.00, has the power to kill 2,632 gophers. But strychnine is very insoluble and a great quantity of water must be used to dissolve it and likewise a great amount of grain must be added to absorb the liquid mixture. Its strength is so reduced that it takes an average of 20 grains to kill one gopher. But, as strychnine is excessively bitter, only about one-third of the gophers eat enough of it to kill them; so extensive experiments have proved that the dead gophers, from \$1.00 worth of strychnine, number only about 874.

On the other hand it has been proved that a 75c box of Mickelson's Kill-Em-Quick actually kills 2,000 gophers. In the

first place, it is full-strength on every grain. In the second place, its odor and taste are attractive to gophers. In the third place, the minutest atom taken into the stomach is enough to kill a gopher.

Read These Letters

Mr. Wm. Heppler, Volga, S. D., writes: "I have just tried 'Kill-Em-Quick' Gopher Poison and can say it is all right. It is away ahead of strychnine. I will recommend it to all of my friends and neighbors."

And Mr. Carl Schaffer, of Mercer, N. D., writes: "Your Kill-Em-Quick Gopher Poison that I used this past summer was the best that I have ever used, and I have tried every preparation on the market but none were its equal. I put it on my fields, and went out to see its effect about two hours afterward and found dead gophers nearly every step I went over the field. I recommend it very highly to all of my neighbors."

Money-Back Guarantee

Mickelson's Kill-Em-Quick Gopher Poison complies with and is guaranteed under the Food and Drugs Act of June 30th, 1906, Serial No. 29689. That is a guarantee against misrepresentation. Back of this is the personal guarantee of our Company, on every box of Kill-Em-Quick. If, after using Kill-Em-Quick according to directions, you are dissatisfied in any way, address a letter to me personally, enclosing the outside label and stating how and when used, the amount paid for and from whom purchased, I will immediately refund the amount paid.

Send Coupon Now for All the Folders

I want to send you some more interesting facts that show you beyond doubt the superiority of Mickelson's Kill-Em-Quick Gopher Poison. I have issued several little folders that I want you to read because I know it will pay you well.



TRADE MARK

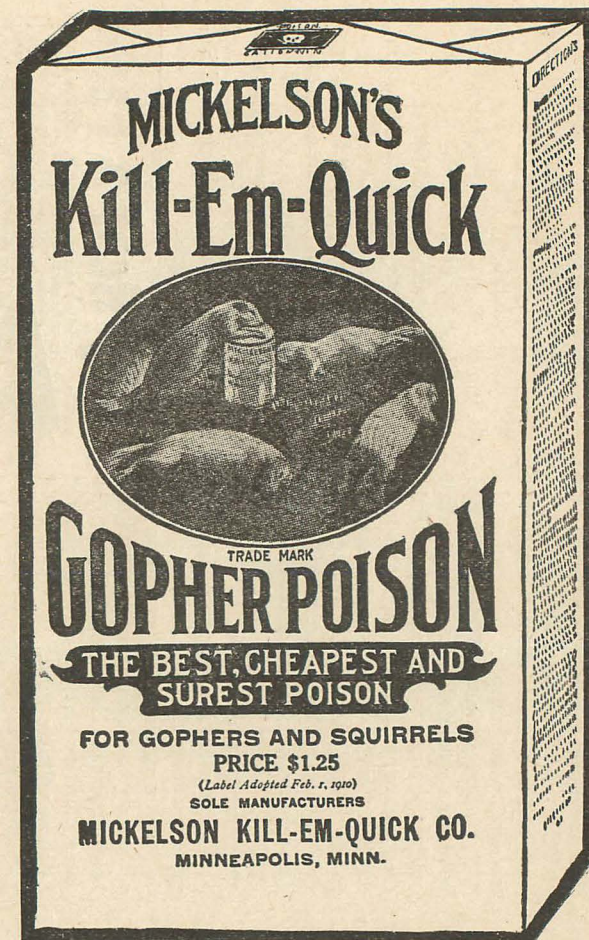
ANTON MICKELSON, President

Mickelson Kill-Em-Quick Company

1429 Washington Ave., No.,

Send Me the Coupon Now

Minneapolis, Minn.



Anton Mickelson, President,
Mickelson Kill-Em-Quick Company,
1429 Washington Ave., No., Minneapolis, Minn.

Dear Sir:—Please send me the folders you speak of in your advertisement. I am interested in Mickelson's Kill-Em-Quick Gopher Poison and the other Mickelson products.

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Address.....

State..... R. F. D.....

74. Hints to Homesteaders.
75. Cereal Crop Experiments.
76. Experiments with Indian Corn,
Forage Crops and Legumes.
77. Bovine Tuberculosis.
78. Poultry Experiments.
79. Distribution of Pedigree Seed.
81. Practical Paint Tests of 1907.
82. Milling and Baking Test. (1908).
83. Pork Production Under North Dakota Conditions.
84. Fattening Hogs.
85. Glanders.
86. Some Ready Mixed Paints.
87. Seed Disinfection and Crop Production. Methods and Types of Machinery Needed.
88. Windbreaks and Hedges.
89. Milling and Baking Tests. (1911).

Available Press Bulletins

1. The Prevention of Blackleg.
 2. Seed Wheat.
 5. Poisoning Gophers.
 6. Cattle Scab.
 7. Plant Trees.
 8. The Hessian Fly.
 13. Tape Worm Disease in Sheep and its Prevention.
 17. Plant Trees.
 19. Harrowing Grain to Kill Weeds.
 20. Cause of Wheat Rust. Its Method of attack. Conditions Favorable to Infection and Rust Development, and What to Do.
 25. Resistent Seed Flax and How to Get It.
 26. Means of Eradicating Dandelions in Parks, etc.
 28. Canada Thistle; Means of Holding in Control.
 30. Notes on Tree Planting.
 31. Notes on Fruit Growing.
 32. Vegetable Gardening.
 33. Deterioration in Wheat Yields Due to Root Rots and Blight Producing Diseases.
 34. North Dakota Demonstration Farms.
 35. Improvement of School Grounds.
 36. A Laying House for Hens.
 37. Late Season Forage Crops.
 39. Growing Flax on New Lands.
 40. Growing Flax on Old Lands.
- Annual Reports—Numbers 1, 4, 5, 6, 11, 12, 14, 15. Part II. 19 and 20.
- Demonstration Farm Reports—Numbers 2 and 3.
- Biennial Reports—Numbers 2, 3, 4, 5, 6, 8 and 9.
- Report of Director of Agricultural College Survey—Numbers 2 and 4.
- A charge of 10 cents each is made upon the survey reports.

MOHALL AND RENVILLE COUNTY

Several cuts will appear in our paper this month of the city of Mohall, Ren-

ville County, this state, and of farm scenes surrounding the town.

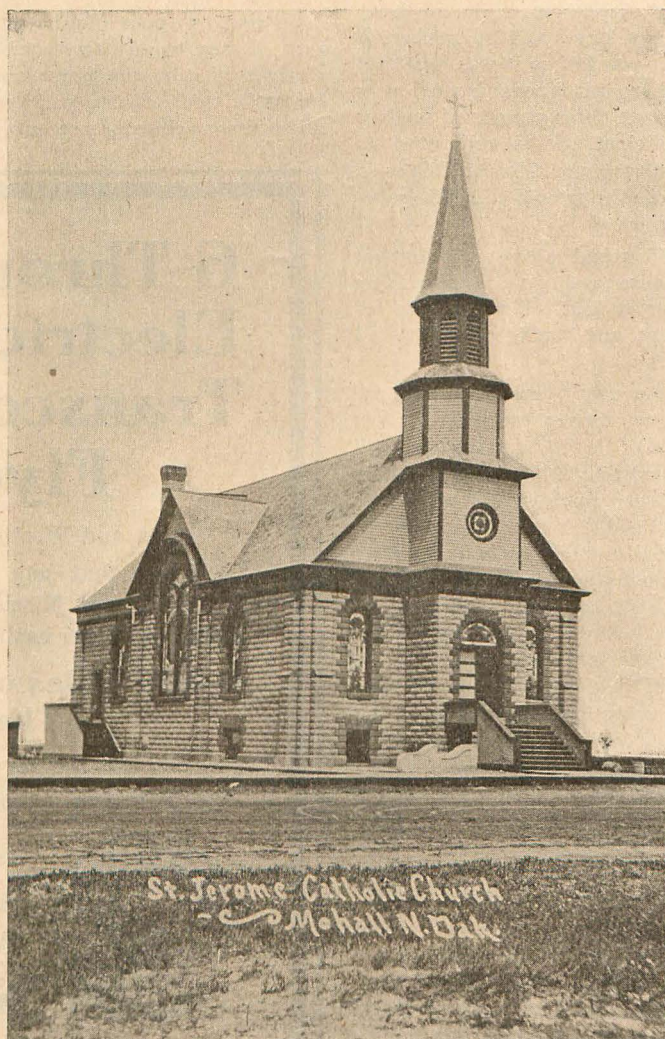
Mohall is situated in the northwestern part of North Dakota, and is the geographical center of the Mouse River Loop, a strip of level prairie land, as large as the states of Vermont and Rhode Island put together. It is just undulating enough for permanent drainage, has a splendid top soil, and yellow clay sub-soil, and has produced in the last ten years of its settlement fully as large a yield as any other part of the state of North Dakota.

The values in these lands are much less than they are in other portions of the state, or in equally as well settled parts of Canada. Hundreds of men have come here and settled and have made themselves independent in the last nine crops that have been raised, and there is no better place for any person looking for

a home than the Mouse River Loop.

Mohall is a nice little city that has been made permanent county seat of the new county of Renville, which has been fittingly named "The Pride of North Dakota." There is no county in the whole state that has as much uniform and tillable farm land for its size as Renville County. Mohall has seven hundred inhabitants, has a graded and high school, seven churches, more cement side walk, according to its size, than any other town in the state, and is second highest in rural mail delivery of any town in the state. It has rural, local and long distance telephones, street lights, natural gas, and recently oil has been discovered on the farm of Jesse Powell. It is expected that eastern capitalists will develop this oil and gas this coming season.

Catholic Church at Mohall



Why? Where? When? How?

Have you a Query? Write the North Dakota Farmer

Please send me bulletins of information on growing rape.

D. J. F.

Answered by Prof. Shepperd

In reply to D. J. F. I wish to say that our bulletins covering rape seedling are, I believe, now out of print.

It is commonly sown either broadcast or in rows about thirty inches apart, and cultivated. I like the row system better of the two ways. When it is sown broadcast alone, it is put in at the rate of five pounds rape seed per acre of the Dwarf Essex variety; allowed to grow until it is about fourteen inches high, and then pastured down with pigs or sheep as the grower may desire.

It is advisable to have two pasture lots of it, so that the stock can be changed to a fresh one, while the one which has been fed down until the stalks are about five inches high and no leaves remain on them can grow up again. It will take a very short while for it to throw out new leaves and be as heavy a growth as it was before it was pastured down. Where it is sown in drill rows and cultivated, three pounds of seed per acre is sufficient. It is cultivated as corn or potatoes would be until it is so that it shades the ground completely between the rows.

Rape will stand a vast amount of stable manure and give a surprising growth of green feed. It is excellent for growing pigs and for brood sows and their litters.

It is frequently sown in a mixture with field peas, barley and millet. It is the only one of the list of plants that will grow up after being fed down and while it makes a rather quick growth after it is pastured off the first time, it springs up and supplies a vast amount of forage after the other plants have once been fed off and give it a chance to grow without being crowded. Rape is also frequently sown with the ordinary grain crops. They dwarf it down until it is very small and sickly looking until after the grain is harvested. After harvest it springs up in the stubble and supplies large amount of fall pasture. In a few wet places where the ground is very rich, it will grow up enough to be caught in the ends of the sheaves, but seldom enough to trouble the curing of the wheat in the shock.

It has a very severe bloating effect on cattle and sheep and they must be very gradually accustom to it before they can be allowed to pasture on it as long as they would naturally do. When it is damp with dew or light rain, it causes

bloating to be very much worse and to come on more quickly. They can gradually be accustomed to it as they are to clover and alfalfa, so that it will do them no harm. It causes no trouble when feeding pigs or horses on it.

This letter is to make some inquiries regarding the habit of cribbing found among horses. We have a horse at the barn that has this habit badly and is run down in flesh. Is it the symptom of some disease that should be treated? He has always been in fair flesh until we put him on the plow last fall and then he began cribbing worse and ran down in condition. I want to remedy the cause if possible. If you have no time to answer at present, do so at your leisure.

Answered by Doctor Van Es

In reply to your inquiry of the 11th inst., I beg to say that cribbing is a distinct vice of the horse and cannot be associated with any other disease, altho in a certain percentage of the

cases, it may lead to flatulency on account of the swallowing of air.

A time-honored remedy against this evil is the appliance of a wide strap rather tightly drawn across the most narrow part of the neck. If this does not bring relief, you may try the anti-cribbing device of Benton, put on the market by Hausman and Dunn, 392-South Clark St., Chicago, Ill. Dear Sir:

What treatment do you recommend for farm horses with sore shoulders and necks. Can you tell me some powder preparation like the circus teamsters use on their horses for shoulder sores? I don't believe in greasy gall cures, I think they hurt more than they do good.

BUY THIS POTATO DIGGER

Extra strong, very durable, light draft, easy on horses, positively best potato digger on market. Fully guaranteed—still priced low. Get free book on Diggers, Pickers, and Sorters.

Hoover Mfg. Co., Box 109, Avery, Ohio.
Transfer points—Buffalo, N. Y., Detroit, Mich., St. Paul, Minn., Marshalltown, Ia., Idaho Falls, Id., Portland Ore., Spokane, Wash., Winnipeg, Man., Hamilton, Ont., Fond du Lac, Wis.

The Hoover



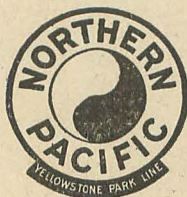
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6,300 Miles of Scenic Highway Through The Land of Fortune

Over which, for 30 years, the Pioneer Line has been handling the traffic of the Fertile and Prosperous Northwest.



A Good Line to Tie Up To

APPLY TO YOUR LOCAL AGENT, or
A. M. CLELAND, G. P. A., ST. PAUL

Northern Pacific Ry

I have been washing their shoulders after the collars were removed at night with cold water and carbolic acid.

Dear Sir:

In reply to your inquiry of the 10th inst., I beg to suggest that the sore shoulders and necks of your horses be washed with the carbolic solution which you mention and yet after you have washed them and while they are still somewhat moist apply by means of a common pepper box a powder composed as follows:

Boracic acid 3 oz., powdered alum 1 oz., powdered camphor $\frac{1}{2}$ oz., powdered charcoal $\frac{1}{2}$ oz.

We would suggest that when you have this powder put up that you require the druggist to powder the mixture exceedingly fine and to pass it thru a very fine sieve as otherwise you would have trouble in getting it to stick to the sores.

Question: If a note is lost is the maker released? Is a note given by a minor valid?

Answer: A business house states several of the applications of law in general use as follows:

If a note is lost or stolen, it does not release the maker; he must pay it, if the consideration for which it was given and the amount can be proven.

Notes bear interest only when so stated.

Principals are responsible for the acts of their agents.

Each individual in a partnership is responsible for the whole amount of the debts of the firm, except in cases of special partnership.

Ignorance of the law excuses no one. The law compels no one to do impossibilities.

An agreement without consideration is void.

A note made on Sunday is void.

Contracts made on Sunday cannot be enforced.

A note by a minor is void, in most states; others require a judicial ruling.

A contract made with a minor is void.

A contract made with a lunatic is void.

A note obtained by fraud, or from a person in a state of intoxication, cannot be collected.

It is a fraud to conceal a fraud.

Signatures made with a lead pencil are good in law.

A receipt for money is not always conclusive.

The acts of one partner bind all the rest.

"Value received" is usually written in a note, and should be, but is not neces-

sary; if not written it is presumed by the law, or may be supplied by the proof.

The maker of an "accommodation" bill or note (one for which he has received no consideration, having lent his name or credit for the accommodation of the holder) is not bound to the person accommodated, but is bound to all other parties, precisely as if there was a good consideration.

If the drawee of a check or draft has changed his residence, the holder must show a reasonable diligence to find him.

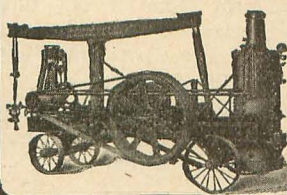
N. D. Institutes Must Not Stop
See Page Two

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Bores through any kind of soil and drills through solid rock—all done with the same rig, which is mounted on its own trucks and easily pulled from place to place. No hired help required for ordinary work; one man and his team does it all. Sold on easy payments. All you need to start is a team of horses and a little money for the 1st payment. **\$10.00 a Day Profit** Our catalog is free—write today. **LISI & MFG. CO.** 640 Clacinda, Ia.

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See that your next horse collars bear the Zenith trade-mark, and don't forget to get our printed guarantee with every collar.

It backs up our claims that Zenith collars save three times the cost because they wear four times as long. Ask for them at your dealer's.

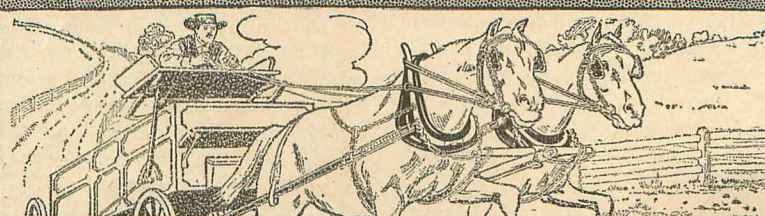


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It shows why Zenith Collars can be unconditionally guaranteed.

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Marshall-Wells Hardware Company
Duluth Spokane Portland



North Dakota Farmer

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PROF. W. B. RICHARDS, Livestock.
PROF. C. B. WALDRON, Fruits, Forestry, and
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GEO. HAUSMANN, Poultry.

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Vol. 12 MAY, 1911 No. 11

Demonstration farms are now recognized as one of the best means of getting information to the farmer. Object lessons speak for themselves. What we see we feel we understand and can copy. Watch the demonstration farms.

Many farmers are trying out commercial fertilizer this season and many interesting object lessons are being started. Not a few will fail and some will succeed. We hope to have some reports for readers when the season ends.

Commercial fertilizers will not take the place of good farming, nor will fertilizers be a success when the land is not well prepared and the crop well put in and cared for. There is no question but what phosphorous acid is getting low in some farm lands. Potash, on the other hand is abundant and not much needed on North Dakota farm land.

Too much nitrogen will stimulate growth, much straw, great promise, and little wheat. It is well to understand the problem before we begin and know what the soil needs and how the elements of added fertility effect plant growth and ripening.

Land that has been well plowed and this spring has been well cultivated and wheat put in in good condition will make a good crop, but carelessness will not pay on the farm in this age. Keep the moisture in the soil.

Rains in early June will mean good crops for North Dakota. It is seldom that we have two dry years in succe-

sion. 1900 was dry and the following an abundance of rain and a magnificent crop. Again 1890 was very dry and no crop but in 1891 came a big crop and so we may expect good returns when we do our part.

The time has come when big farms no longer pay and smaller farms will be the tendency, and so it should be. Small farms 160 or 320 acres at most should be the limit for profitable farming in North Dakota. With a family on every half section of land, it would do wonders for our state. Boost for a family on every half section and no state can then compare with ours.

Flax promises also to come back as a profitable farm crop for our farmers providing we treat our seed as we now do wheat and so get rid of flax wilt as we now get rid of wheat smut. This difference, however, we must not grow flax after flax, but rather on the same land only once in five years.

After all, we live for the children and so let us remember to help them start right in the world; form habits of industry, frugality and a determination to stand for what is right. With the boys and girls all started right this would be a great state, and a beautiful world. With selfishness, deceit, fraud and cunning as predominating characteristics in our life and business the world looks dark when all might be bright. "My son, get money, get it honestly if you can, but get money," has been the spirit of too much teaching if not in word, then by example. "Am I my brother's keeper." Go ask Christ. Ask your conscience or your better nature and stop not till the answer comes true and sure. When do my rights end and my neighbors begin? Life is what we make it; environment largely makes us. Let us have better environments and a better future. God made man and man made sin and vice. You have done your share,—toward making it or stopping it.

Professor Hoverstad gives some figures regarding the profits on raising wheat in Minnesota covering a period of ten years. He said the figures had been carefully gathered in three different districts, which included the entire state. The result showed that on an eight-bushel crop of wheat during ten years the loss was \$2.79 an acre, on a ten-bushel crop loss was \$1.01 and on a twelve-bushel crop the loss was 23 cents. The cost of raising the wheat included a charge for interest on the investment in the land, the time of the men and farm help, depreciation in machinery and stock.

On a sixteen-bushel crop the profit was shown to be \$2.32 an acre, and

on a twenty-bushel crop the profit was \$4.87 an acre, or one twenty-bushel crop gave a larger profit than two sixteen-bushel crops.

YIELDS OF WHEAT

It is a significant fact for one who is considering either the question of our wheat supply for the population of the world, or who is studying the problem of soil conservation, to know the average yield of wheat for the various countries. The estimated yield of wheat per acre for 1909 for the several countries has been estimated as follows:

England	34.4 bus.
France	22. bus.
Belgium	39.2 bus.
Germany	30.4 bus.
United States	15.7 bus.

The countries which have been longest cropped are the largest yielders of wheat; in fact, the four countries named have almost twice the yield for the United States for the same year. This suggests to us certainly food for thought and further the possibility of future yields in the United States when better methods of cultivation, crop rotation and fertilization have been adopted. That much can be accomplished by better methods of cultivation and systematic crop rotation is clearly set forth in the results for the demonstration farms of North Dakota under the direction of the Superintendent of the Demonstration Farms for the year of 1909. Probably the average yield for the state for that year was not far from 13 bushels.

In 1906 six demonstration farms were established and a system of crop rotation adopted. Six more were established in 1907, and in 1909 eight additional farms were started. In 1909, therefore, on the eight farms undoubtedly it was but a continuation of wheat growing as practiced in preceding years while on the six farms started in 1907 crop rotation had been practiced and this was the third season, and on the six farms started in 1906 the crop rotation had extended farther, covering a period of four years. What was the average yield then in 1909 for the several farms located in different parts of the state?

Farms Started in	Average bus.
1909	13.28
1907	22.06
1906	26.85

In other words where crop rotation had been practiced for four years the yield was slightly more than twice as great per acre for wheat as the average for the eight farms started in 1909, and where wheat had presumably been grown during preceding years.

Better methods of cultivation, crop rotation, conservation of soil and fer

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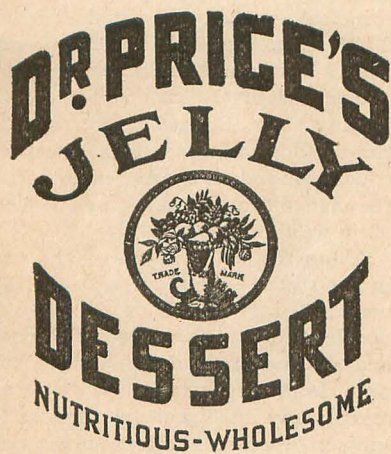
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tility are, therefore, essential factors in securing a maximum crop of wheat in North Dakota. Whether or not the addition of commercial fertilizers would materially increase the yield is still an open question, but, undoubtedly, fertilizers will come to be used extensively in this state as they are elsewhere; perhaps, not to the extent as reported for Italy where, with an area of 115,000 square miles, in 1907 there were used 1,147,700 tons of commercial fertilizer, or, approximately, ten tons for each sec-

tion of land, including every part of the country, that which is occupied or farmed as well as mountainous, woodland, etc.

The maximum yield of wheat per acre on the demonstration farms for 1909 was 41.61 bushels, while the minimum yield was 7 bushels per acre. Crop rotation and diversified agriculture are, therefore, the first essentials in the conservation of the soil and fertility to increase the yield per acre.

DRY FARMING NEWS

GET DRY FARM EXHIBIT COMMITTEES AT WORK

At the present time there seems little reason to doubt that the exposition of dry-farmed products which is to be held at Colorado Springs, Colo., October 16 to 20, will be one of the most valuable and instructive displays of agricultural production that the world has ever seen. It will be on such a scale and so unique that it should draw investigators from various parts of the earth to see what kind of a demonstration can be made with dry land growths.

The importance of having a place in this exhibition can hardly be emphasized too strongly. Right now is the time to begin getting ready the exhibits that are to go from your county. Let the commissioners act at once in naming a committee that shall work with agricultural societies and others in preparing an exhibit.

From all over the west and southwest come reports of an aroused interest in this exposition. The Southwest Kansas Editorial association has announced its intention of taking a hand in getting up a display, and up in the state of Washington one train already has been organized to tour the west with a display of dry-farmed products, especially prepared for the Colorado Springs exposition. The farmers in that section captured prizes at Spokane last fall and after doing the same this year will take their display on tour.

The classes at the Spokane exposition were as follows: Threshed grains; sheaf grains and grasses; vegetables and roots; fruits; general exhibits and specials. In the general exhibit class came the displays made by states and provinces, commercial bodies, dry-farm machinery, etc. In the special class were placed the displays by experimental stations, agricultural colleges, boys'

and girls' societies, various contests in practical farm work, etc.

This congress and its exposition are going to attract wide interest, and it will pay to be represented in it. The transcontinental railroads of the country have taken a deeper interest in it than in any similar gathering for years, subscribing liberally with money and agreeing to make favorable rates. The state legislature of Colorado has made an appropriation and other funds will be available, so that liberal premiums can be offered.

An organization should be effected in this county right away to have charge of any exhibit that goes from here. Of course the crop is not grown yet, but we feel so sure of what can be done here that we want the work of exhibition to get well in hand.

\$10,000 FOR DRY FARMING CONGRESS

One of the most important acts of the 18th general assembly just before it adjourned sine die, was to appropriate the sum of \$10,000 to be used for the International Dry-Farming Congress.

Its importance to the state and the west was pretty generally recognized by the legislators and the appropriation went thru with a whoop after the amount had been agreed upon in committee conference. The \$10,000 will be paid into the state board of immigration for use by the congress.

TWO CITIES RIVALS

Salt Lake, Utah, and Lethbridge, Canada, After Next Dry-Farming Congress

Salt Lake City, Utah, and Lethbridge, Alberta, Canada, are the first candidates in the field for the 1912 convention and exposition of the International Dry-Farming Congress.

Salt Lake began the movement at a meeting of the general committees of the Commercial club on April 25. Prof. Lewis A. Merrill, executive committeeman for that state, is pushing the matter. Salt Lake entertained the second dry-farming congress, when it was a much smaller body than now.

The Lethbridge, Alberta, Board of Trade has granted J. W. McNico, its secretary for five years and chairman of the dry-farming section of the body, a vacation from his regular duties that he may devote his time exclusively to the work of organizing a campaign to secure the 1912 International Dry-Farming Congress. He is to travel extensively thruout the region, collecting a dry-farmed exhibit and arousing an interest in the congress. Lethbridge is a fine little city in the heart of the dry-farming wheat belt. At the Spokane show of dry-farmed products, held at the time of the Congress last year, the Canadians took 50 per cent of the premiums.

DRY FARMING CONGRESSES TRAIN VISITED BY 55,000

The Rock Island railroad's Dry-Farming Congress special train that toured the semi-arid sections, traversed by the lines of the company, on April 23, ended its six weeks' campaign in the interest of better farming. Taken altogether it was one of the most expensive efforts ever made by a great corporation to instruct those upon whom it must depend for patronage.

H. M. Cottrell, a distinguished agricultural educator, had charge of the train for the company and was the principal speaker. The train traveled 2,381 miles and 150 meetings were held. By actual count over 55,000 people visited the cars and heard the lectures. Mr. Cottrell spoke over 200 times, and was assisted by prominent educators and dry-farm experts from the agricultural stations and colleges of the west.

Along the entire route of the train in five states—Colorado, Kansas, Oklahoma, Texas and New Mexico—the people showed themselves interested and enthusiastic. Apparently they were deeply concerned in learning and asked many intelligent questions on the subjects discussed. From such a wide dissemination of information a great deal of good must come that will tend to increase agriculture in the semi-arid regions. It is quite certain that a larger number of people than ever before now know something of the theories of dry-farming and are ready to experiment with dry-land crops that have been proved in other sections.

Seeds, Trees and Gardens

C. B. Waldron, N. D. A. C., Editor.

SMALL VS. LARGE SEED POTATOES

By L. R. Waldron of Dickinson Sub-Station

In 1908 a trial was made in the use of small and large seed. It was found for that year that when large tubers were planted, (using about 35 bushels of seed per acre,) the value per acre of the crop, less the cost of seed, was about twice as large as was the value of the crop when small tubers were used for seed, planted at the rate of about 5 bushels per acre.

The same experiment was repeated in 1910. The Vermont Gold Coin was used in this trial. The large tubers used for seed were very large, and many of the small tubers were large enough for cooking. A third plat was planted as a check plat, using cut pieces for seed. The following table gives some of the results: Comparative Value of Large and Small

Potato Tubers for Seed			
Tubers	Seed per Acre-Bu.	Weight of Seeds-ozs	Stalks per Hill
Small	13.6	2.0	88.9
Large	76.5	12.0	9.9
Small	13.6	2.0	3.5
Cut	9.4	1.5	2.8
Total Yield per A.-Bu.	Per Cent Marketable	Value of Acre less Cost of seed	
88.9	92.3	\$ 80.32	
162.3	92.4	130.20	
115.7	96.0	109.36	

The tubers were valued at thirty cents per bushel at planting time, and at one dollar per bushel at digging time. The spring price was the very highest obtainable, while in the fall potatoes were being retailed at \$1.50 per bushel. For conditions of 1910 the very large amount of seed used is seen to be justified. No allowance is made for the increased cost of planting or for the increased cost of digging and marketing, but, making a generous allowance for these items, the heavy seeding would still show excellent profits.

It is very well known that the increased sowing of potato seed will increase the yield, but it is often a question to what extent the heavy seeding can be carried at a profit. In the spring of 1910 potatoes were a drug on the market. Many farmers could not sell what they had on hand. With such a condition it is always wise to sow an abundance of seed. The seed costs but a little, the heavy seeding will produce an increased yield, and as a general rule po-

tatoes are a good price in years following low prices.

From the table it is seen that the check plat with cut seed produced a greater yield per acre than the small seed altho the amount of seed used in the check plat was the smallest of the three plats.

The heavy seeding had the greatest number of stalks per hill, but we did not find an appreciable larger percentage of small potatoes on this plat. Particular attention was paid to this, and a study was made of the number of stalks and the number of small and large tubers for each hill.

N. D. Institutes Must Not Stop
See Page Two

SEEDING ALFALFA

Alfalfa should be put on land that has been well prepared and which has been in either corn or potatoes or other cultivated crop the year before. It should also have received a good coat of manure a year or two ago. A top dressing of well-rotted manure will help at any time. The seed bed should be good and firm with about an inch to an inch and a half of soil mulch on the surface. The alfalfa should be sown between the 20th of May and first of June at the rate of 10 to 15 lbs. per acre. The best way to seed alfalfa is with a grass attachment on the ordinary grain drill. The grass attachment should have sprouts that would deliver the alfalfa into the discs or shoes of the drill. At the same time the drill is seeding the alfalfa about 100 lbs. of alfalfa soil should be sowed per acre with the drill; the soil to be put in where wheat or oats would be seeded.

Alfalfa should not be sown more

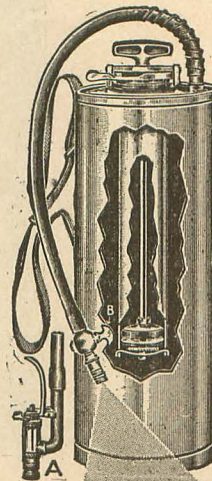
Brown's Auto-Spray No. 1

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Compressed Air Sprayer

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"Absolutely O. K."

Fully Warranted

More than
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PATENTED.

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SAVE YOUR
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Vegetables

Insects, Worms and Fungi
are Enemies

Don't Wait

The Bugs are Ready
Are You?

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Dakota
Grown

SEED CORN

Kiln Dried
Selected
and Tested

The best seed corn we have ever offered. It pays to plant the best and that is what you get when you buy from us. Order today—the supply is limited. We have a good stock of very high grade seed wheat, oats and barley.

Alfalfa, Clover, Timothy and grass seeds are scarce this year, but our stock is the very highest test and will prove their worth when harvest time comes. Your order should not be delayed if you want good seed. Send today for our 1911 seed catalog. It is free to you.

FARGO SEED HOUSE, Dealers in strictly high-grade seeds
FARGO, - - - **NORTH DAKOTA**

than 1½ inches deep and an inch is probably better. If it can be put in just so as to get into the moist soil without getting more than an inch deep it is best.

The weeds should be destroyed before seeding by a thoro harrowing of the ground. If weeds bother during the summer time they should be clipped with a mower whose bar is set high enough so as to run over the alfalfa plants. Should the alfalfa turn yellow it is usually well to cut it immediately.

Alfalfa should never be sown on ground that is so low that there is any chance of water standing upon it in spring and it should not be sown on ground whose permanent water table is closer than 3 feet to the surface of the ground. Low, clod, bottom land will not raise a good crop of alfalfa. A rich, well drained clay loam subsoil will produce the best stands of alfalfa. On some soils an application of lime will be very beneficial. Under no circumstances should alfalfa be sown on poorly prepared or weedy ground nor on land that has a poorly prepared seed bed. Alfalfa sown on spring plowing will usually be a failure because the land is too loose.

HUNGARIAN MILLET

As a reader of the North Dakota Farmer, I would like your opinion as to whether Hungarian Millet draws nitrogen from the air as food for plants the same as does clover?

Y. E.

York, N. D.

Answered by Prof. Shepperd

Replying to Y. E., I wish to say that Hungarian millet does not draw nitrogen from the air as do clover, peas, vetches, alfalfa and the other members of the legume family of plants. Millet belongs to the true grass family and does not draw nitrogen from the air, any more than blue grass or red top would do. It has the tendency to smother back weeds, to allow a great many of them to sprout and the seeds to be destroyed before the millet crop is put in. It makes a quick growth and is ready to cut for hay before the troublesome weeds of this country can have time to ripen seed. It usually leaves the ground mellow and in consequence of these two effects produces a good seed bed for the following crops of small grain. It adds nothing to your land, however, in the way of enriching it with actual plant food.

Read the North Dakota Farmer.

Make the N. D. Farmer a gift to your friend.

See Page Two

Livestock Department

FARM AND STOCK NOTES

Good brood mares make the best work mares on the farm.

The man who grows grain to sell in market is a soil robber.

A good night's rest of the teams, means more and better work next day.

The manurial value of foods corresponds with their nutritive value.

The heavy boned, short-legged, low down chunky sow is rarely a good milker.

Thoro preparation before planting is one of the essentials in small fruit culture.

A diversity of crops and products fits the farmer for all seasons and all markets.

should be fed more grain than one doing slow work.

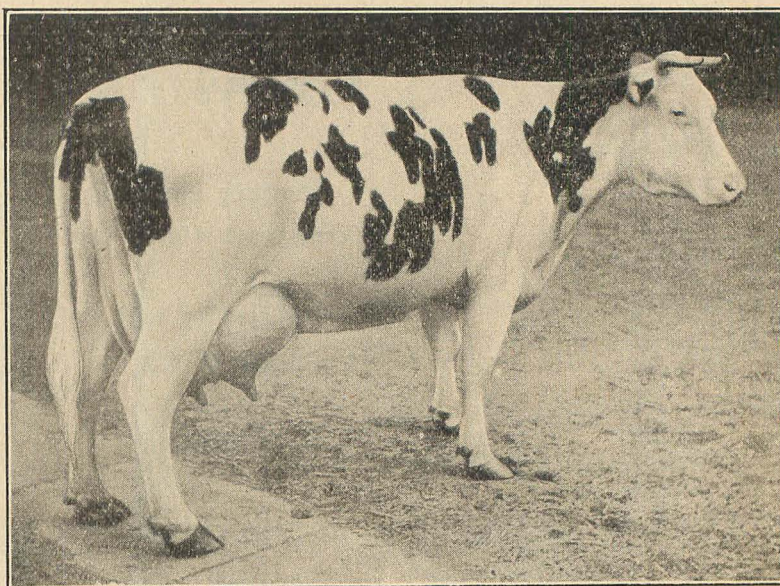
A safe rule with nearly all garden seed is to cover in proportion to their size and weight.

A man's business or profession will bear the marks of his individuality and his training for the line of work he is in.

No business will pay where the raw material used and the labor involved costs more than the value of the products turned out.

Commencing the cultivation of crops a few days late will often give the weeds and grass a start that cannot be overcome during the entire season.

When all of the essential elements of plant growth are in the soil in sufficient



Pontiac Clothilde DeKol 2nd 5279 A. R. O.

A good rotation of crops makes farming a much safer business than haphazard work.

As the hog grows heavier it costs more to put on each pound of flesh.

Breed in dairy cows is an important thing to consider, but not more so than individual quality.

The scrub is the result of the owners' and the breeders' misused advantages and opportunities.

If a horse is required to do extra hard work he should be liberally and frequently fed.

No animal varies more than the sheep and none so speedily adapts itself to the climate.

A horse doing fast or severe work

supply, four other important agents must cooperate before the seed can germinate and the plant grow properly. They are heat, air, water and light.

With all classes of stock there is a definite period in life allotted to growth, and if, during that period only a scanty supply of nutriment is afforded, a stunted, dwarfed animal is the inevitable result, which no amount of after care can remedy.

HOLSTEIN CATTLE

THE MOST PROFITABLE DAIRY BREED

Illustrated Descriptive Booklets Free

HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA
F. L. HOUGHTON, SECY, BOX 135, BRATTLEBORO, VT.

PONTIAC CLOTHILDE DEKOL 2D 5279 A. R. O.

Whether in royal or social circles, queens are but transients, one following another; and among the dairy breeds in the most exclusive sets of bovine society the rule also holds good. Since the inauguration of the official test, and beginning with the noted cow, DeKol 2d, the Holstein-Friesian breed has had many queens; and starting with a production of a little over 21 lbs. of butterfat, the highest weekly production has slowly and steadily been advanced till it has now almost reached the 30-lb. mark.

Since DeKol 2d produced 21 1-3 lbs. fat in one week, only 16 years ago, over 250 Holstein-Friesian cows have exceeded that production, altho but a few of them have at the same time had the honor of holding the record for largest production. During the last seven years, the names of Aaggie Cornucopia Pauline, Colantha 4th's Johanna, Blanche Lyons Netherland, Grace Payne 2d's Homestead, and DeKol Queen La Polka 2d, have been familiar, not only to Holstein-Friesian breeders, but also to all students of the dairy industry and of the development of the dairy cow; and now in Pontiac Clothilde DeKol 2d we have another name that becomes famous.

In former official tests the work of this cow has been verified in the usual way; and in the last test, owing to the exceptionally large production, it was twice verified, the interval between the two verification tests being 10 days. For a verification test, the State Agri-

cultural College supplies a second supervisor to assist the first, the two supervisors relieving each other in keeping the cow under constant watch, and each making independent weighings of the milk and determinations of the amounts of fat produced. The first verification test was made before the cow had reached her best production, and showed for 24 hours 82.4 lbs. milk containing 3.81 lbs. fat; the second was made while she was at her best, showing 88.8 lbs. milk containing 4.304 lbs. of fat, or at the rate of over 30 lbs. fat per week. The highest yield for any 24-hour period of the test was 4,457 lbs. fat from 94.7 lbs. milk.

In estimating the amount of butter that can be made from a certain amount of fat in the milk, our State Agricultural Colleges add one-sixth of the fat to itself. By this rule, the 29,766 lbs. of fat produced in 7 days by Pontiac 116.229 lbs. fat produced in 30 days, Clothilde DeKol 2d would make 34.73 lbs. of commercial butter, and the 135.6 lbs. of butter, being equal to nearly 5 lbs. of butter per day for 7 days, and over 4½ lbs. per day for 30 days. The semi-official lactation tests show that the average Holstein-Friesian cow produces in her milk 2.5 lbs. of solids not fat to every pound of fat; and on that basis this great cow must have produced 290.57 lbs. of solids other than fat in 30 days. Adding this amount of solids not fat to the 116.229 lbs. of fat, we have 406.8 lbs. of total solids, all digestible and of the highest food value, again proving that in food production nothing can equal the Holstein-Friesian cow.



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If wool growers all over the country only knew how much more they can get by selling direct to the mills, traveling wool buyers, instead of smoking ten-cent cigars and stopping at \$2-a-day hotels, would all be looking for new jobs.

Why sell your wool at home, men? Don't do it. Investigate another plan which 50,000 wool growers have found pays them well.

The MILLS pay highest prices for wool. They pay two, three, sometimes four cents more than the grower can get at home. The biggest mills in America come to us for their wool! They have known us 46 years. We supplied them with 20 MILLION pounds last year.

We can sell your wool direct to these mills for you and make big money for you. Our charge for storing, grading, selling and insurance is only a trifle of the extra cash you will get.

We handle shipments carefully and send the shipper his money promptly. With our new up-to-date warehouses, the finest in the world, delays are impossible.

Wait for Free Market Reports

Hold your wool till this proposition has been more fully explained and till our last Market Report, just out, reaches you. This information costs not a penny. You are welcome to it. Merely send us your name on a postal today.

Wool sacks, tags, shipping blanks and envelopes free.

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(Formerly Silberman Bros.) Desk 19, Chicago, Ill.
Largest Wool House in America—Established 1866

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HORSES

FOR SALE

Percheron, Belgian and Shire horses
J. W. & F. T. PETERSON, Litchfield, Minn.

CATTLE

North Branch Stock Farm. High class Short-horns. Herd, bull, Supreme Judge 177722—pure Scotch. John Donnelly, Grafton, N. D.

FOR SALE

GALLOWAY CATTLE
J. W. & F. T. PETERSON, Litchfield, Minn

SWINE

POLAND CHINA PIGS, also Shropshire sheep. Seed grain. GEO. N. SMITH, Amentia, N. D.

EGGS AND POULTRY

EGGS FOR HATCHING, Express prepaid, \$2 per 15, from pure bred Golden Wyandottes and White Plymouth Rocks (Fishels strain.) Choice stock for sale. Send for Catalog. C. H. McGEE, Oriska, N. D.

MISCELLANEOUS

Envilla Stock Farm, Cogswell, N. D. will quote you special prices on Angus Cattle, Shetland Ponies, Duroc Jersey Hogs, Wolf and Fox Hounds, Pure Bred Poultry, Pet Stock. Write them.

FOR SALE One of the finest and best improved farms in this county, 3½ miles from Bowbells, part cash, worth \$5,000, for \$3,900. H. L. Lyon, Bowbells, N.D.

THE MOUSE RIVER LAND AND LOAN COMPANY AND THE MOHALL STATE BANK

At Mohall, Renville County, North Dakota, have a large list of farm lands for sale, and terms and prices are better than in any other part of North Dakota. They would be glad to have you write them for prices and terms. Our slogan is, "Own your own home in the Mouse River Loop."

FARM FOR SALE—A fine half section, broke and well improved; 3 miles from town. Owner, PERRY MOLES, Sherwood, N. D.

100 Tons of Hay, 300 Cockerals and Tom Turkeys—choice ones. Buy now—special prices. Envilla Stock Farm, Cogswell, North Dakota

RED-POLLED AND GALLOWAYS

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WANTED—Young Men to take the Railway Mail Clerk examination called for the Dakotas; salary \$900, work half time, common school education required. Passing means appointment. American Institute, Dept.—\$3i-Daytapi whio.

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THE BERTHOLD RESERVATION is the choicest agricultural land in North Dakota. It will soon be opened for settlement. Send 25 cents in coin to Geo. J. Smith, United States Commissioner at Plaza, N. D. and get his valuable booklet telling all about the opening and the land. Send today.

FOR SALE. Creamery in first class condition at a bargain at Crystal, N. D. For further information write to J. S. GESTSON, Sec. CRYSTAL, N. D.

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TO FARM OWNERS: Our plan ppts you into communication with buyers at low cost; write for particulars.

Co-operative Advertising Company
Fergus Falls, Minn.

HOW TO SELECT A GOOD GRADE COW

By O. C. Gregg

The five points to be observed in the selection of good milking cows from grade or native cows are the prominent ones that will appear in all of the milking forms of the cattle race without regard to breed. We can give these points under numerical heads.

First: Observe with care and note as a first point, that the cow that we are now passing upon has a large and ample-sized body. Let this body extend from a point just back of the shoulder straight down to the lower part, also let it be included between the line that we have mentioned and a line that we will call imaginary that will extend from the hook or hip bone straight down to the lower part of the body again. It is an excellent thing if the depth of the body is as strong or stronger at this last point as at any other point that we will call its depth. Sometimes this bodily capacity is composed to a certain extent in the length of the body. In either case we want a large, ample and capacious body. This large body is needed and must appear for the ample supply of milk must come from much food received and digested within the area that we have noted. This food content is there taken up into the blood. With this evidence of a good supply of blood we have a good start in estimating that we will have a good supply of milk.

Second: Look with care behind the fore shoulder and observe if the back bone is prominent and if that part of the body which is called the crops is scantily covered with flesh; this does not mean that the animal shall be in poor condition; it only means that the animal is not inclined to use this blood to make flesh out of it. Beef cattle are full at this part of the body. We are selecting for milk. We want the ample supply of blood to go to the udder where the milk is made.

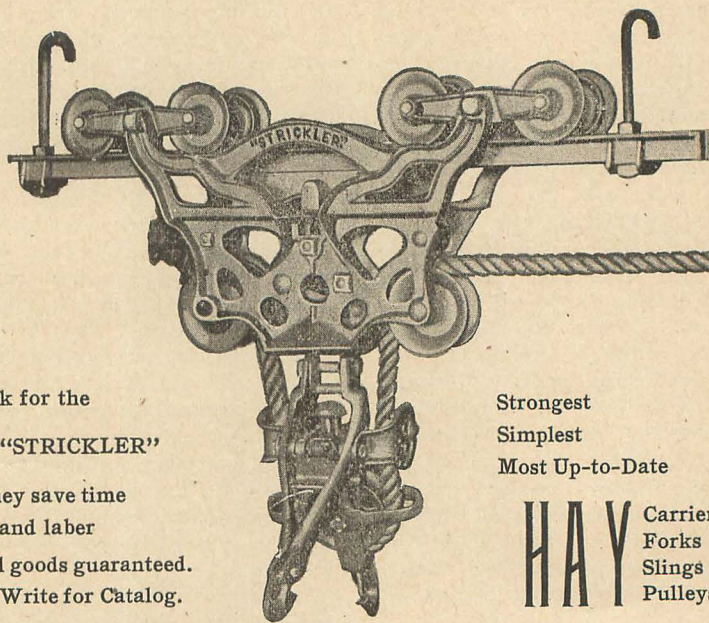
Third: Next go to the udder and see if it be reasonably large. Do not depend upon the eye to estimate this size. Many very good udders are contained largely within the body and their size is not apparent. You will see the fore part of the udder be it large or small. Take hold of the skin between the hind quarters. Up to the point where the skin ceases to be as loose as upon the other part of the body we can judge that the udder extends. One can get a fair idea of the udder attachment to the body by drawing an imaginary line from the point last mentioned to the front udder that we have seen; this will give one a distinct and positive line of attachment of the udder to the body. If that line is long, then we have the clasping form. In such a form we have nature's provision to receive that ample

ST. PAUL UNION STOCKYARDS COMPANY REPORT FOR APRIL, 1911

Comparison of Receipts and Shipments of Livestock

		Receipts				
Railroads	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
C. R. I. & P....	532	30	932	2177	23	57
C. G. W.....	1028	714	4379	204	32	104

STRICKLER HAY TOOLS



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"STRICKLER"

They save time
and laborAll goods guaranteed.
Write for Catalog.

Strongest

Simplest

Most Up-to-Date

HAY Carriers
Forks
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STRICKLER HAY TOOL CO.

Janesville, Wis.

CENTRE-LANE STOCK FARM

BREEDER OF: Black Percheron and Hambletonian Horses, Red Polled Cattle, Poland China Hogs, White P. R. Chickens, White Holland Turkeys, White Embden Geese, White Pekin Ducks and White Guinea Fowls.

GROWER OF: Minnesota No. 169, Spring Wheat, Swedish Select Oats, White Hulless and Success Beardless Barley, Turkey Red Winter Wheat, N. D. 959 Winter Rye, Northwestern Dent Corn, Early Ohio Potatoes, Timothy and Alfalfa.

Young Stock and Pure Seed, for sale. Write me for particulars.

J. A. ENGLUND, Prop.

Kenmare, North Dakota.

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HEAVY DRAFT STALLIONS, MARES, AND SPANISH JACKS.

WOLF AND FOX HOUNDS that will catch and kill.

PET STOCK OF ALL KINDS. PURE BRED POULTRY, all varieties.

We can please you both in Quality and Price

L. H. WHITE, Prop.

COGSWELL, N. D.

North Dakota Breeders

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supply of blood that this good body will produce.

Fourth: Now put the hand on what is known as the milk vein which extends from the udder along the lower part of the body on both sides; at the end of this vein will be found a hole thru the body wall. This hole should be large enough to take the end of an average index finger; by pressing against the wall of the body for the space of about two inches in a varying direction a second hole may be found that will be about the size of a lead pencil. Look for these holes on both sides of the body. These holes thru the body are for the return of the veins which take the blood to a very great extent from the udder. Here we have an absolute fact which indicates that the blood makes its circuit thru the udder or gland where the milk is made. We can safely reason that from this abundance of blood we shall have an abundance of milk.

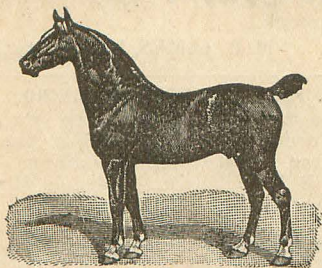
Fifth: Last of all look and see if the eye of the animal is large and full. This largeness of the eye indicates a strong nerve system. Digestion and milk secretion is the work of the nerve system. The nerve system is the power that drives this animal milk machine.

These five points may be called five degrees in cattle judging. We add a sixth. Use the scales and the Babcock test, and the cow has been brought to a sure cattle judgment. Any cow that will verify the six points will prove to be a good milker unless she has been ruined by bad handling or bad feeding.

**N. D. Institutes Must Not Stop
See Page Two**

Warranted to Give Satisfaction.

Gombault's Caustic Balsam



Has Imitators But No Competitors.

A Safe, Speedy and Positive Cure for
Curb, Splint, Sweeny, Capped Hock,
Strained Tendons, Founder, Wind
Puffs, and all lameness from Spavin,
Ringbone and other bony tumors.
Cures all skin diseases or Parasites,
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Bunches from Horses or Cattle.

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Sprains, Sore Throat, etc., it is invaluable.
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Warranted to give satisfaction. Price \$1.50
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press, charges paid, with full directions for
its use. Send for descriptive circulars,
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The Lawrence-Williams Co., Cleveland, O.

C. M. & St. P.	3323	1824	12437	2678	75	312
M. & St. L.	2566	801	11278	321	11	269
C. St. P. M. & O.	2710	1069	21772	3025	50	447
C. B. & Q.	104	249	1330	312	.....	25
M. St. P. & S. S. M.	1985	2371	4989	253	.....	146
Gt. Nor.	5360	4197	14541	2620	7	413
Nor. Pac.	2342	1104	2095	1171	23	119
St. P. B. & T.	.....	.....	.....	.....	.....	.....
Driven In	695	67	1054	99	38	.....
Total	20645	12426	74807	12860	259	1892
Increase	.....	4070	23575	6391	.....	270
Decrease	1137	.....	.....	.....	81	.....
Jan. 1 to date	92642	40742	338685	78818	1353	8553
Increase	6471	15460	107164	.....	.....	1297
Decrease	.....	.....	.....	42958	625	.....
Average Wts.	796	178	216	93	.....	.....

Shipments

C. R. I. & P.	1101	188	135	.....	27	36
C. G. W.	1362	207	147	25	3	55
C. M. & St. P.	4029	798	18320	1213	33	311
M. & St. L.	732	374	120	.....	.....	27
C. St. P. M. & O.	1792	1792	422	239	25	88
C. B. & Q.	2057	1067	232	.....	1	71
M. St. P. & S. S. M.	626	67	301	1184	22	37
Gt. Nor.	342	78	.....	45	66	19
Nor. Pac.	705	47	.....	326	101	36
St. P. B. & T.	.....	.....	.....	.....	.....	.....
Driven Out	309	417	74	11	86	.....
Total	13055	5035	19751	3043	364	680
Increase	.....	1100	14974	1367	.....	77
Decrease	1904	.....	.....	.....	24	.....
Jan. 1 to date	58537	14688	93770	42050	1395	3073
Increase	7057	6093	50269	.....	.....	472
Decrease	.....	.....	.....	37157	794	.....

Comparison of the Origin and Disposition of Livestock Origin of Livestock Received

States	Cattle	Calves	Hogs	Sheep	Horses	Total Cars
Minnesota	17030	10873	63334	8527	95	1579
Wisconsin	494	970	4555	22	50	88
Iowa	22	.....	379	.....	54	10
Far South	22	.....	.....	2350	.....	10
So. Dakota	754	169	3620	938	36	83
No. Dakota	2127	414	2919	415	.....	110
Montana	166	.....	.....	608	.....	9
Far West	.....	.....	.....	.....	.....	.....
Mani. & N. W. T.	.....	.....	.....	.....	.....	.....
Far East	.....	.....	.....	.....	.....	.....
Returned	30	.....	.....	.....	24	3
Totals	20645	12426	74807	12860	259	1892

Disposition of Livestock

S. St. Paul pkrs	6683	7813	55096	9632	.....	.....
Cy. & St. butch.	525	286	530	559	.....	33
Outside pkrs	.....	556	15945	.....	.....	141
Minnesota	2084	726	73	129	203	94
Wisconsin	2111	622	301	239	37	90
Iowa	2870	1112	135	780	27	98
Nebraska	.....	.....	.....	.....	.....	.....
Kans. & Mo.	644	174	.....	.....	.....	23
S. Dak.	747	270	.....	181	.....	25
N. Dak.	166	1	.....	.....	44	9
Mont. & West	.....	.....	.....	.....	.....	.....
Far South	.....	.....	.....	.....	.....	.....
Man. & N. W. T.	.....	.....	.....	730	5	4
Mich. & E. Can.	214	68	.....	221	2	10
Chicago	880	60	229	204	.....	33
Ills (ex Chicago)	2724	1160	483	.....	.....	96
Eastern Points	60	.....	2055	.....	22	21
Returned	30	.....	.....	.....	24	3
Totals	13055	5035	19751	3043	304	680

Poultry Department

Geo. Hausmann, Hillsboro, N. D.

A FEW POINTERS

When receiving eggs that have been shipped any distance, do not put them under the hen immediately but let them remain quietly for twenty-four hours, so as to allow all the fertile germs to recover their natural position, as the constant jarring of the cars is apt to strain the fine fibers. By adhering closely to this, a much better hatch may reasonably be expected.

Don't be too curious to see whether those eggs, that you have sent for, have hatched already or not. Most times this curiosity costs a chick or an egg to be broken. Therefore let her alone as much as possible.

Dust your setting hen thoroly during hatching with insect powder, which can be done by taking her by the legs and thus powdering her. This is absolutely necessary for the chicks' sake.

When your hen has finished hatching let her remain in her nest for 24-72 hours. 'Tis better to wait long enough than to hurry them out.

Feed nothing to your chicks before they are from 24-72 hours old. We feed on 36 and 48 hours. They have enough nourishment from the egg until then.

A good feed is hard-boiled egg with some bread crumbs, eggs to be crushed, shell and all.

Soil of some kind must be before them at all times.

Watch cloely for headlice, a good thing to get rid of them is anyointment. Lard mixed with liquid lice killer or lard and crude oil.

Do not crowd your chicks.

Do not let them roost as soon as they want to, for it will cause crooked breast bones. When starting them in to roost, use wide boards 3-4 inches wide.

These few pointers may seem easy and probably of no value to some, but then it is just the little things that do the work, for every little bit helps.

A NORTH DAKOTA WOMAN'S EXPERIENCE IN RAISING POULTRY

By Miss Maude Mathews on Woman's Day at Grain Growers' Convention

It seems to me it is now also a good time to resolve to turn over one new leaf anyway, that we as residents of the farm see to it that poultry has the place it

should have upon the farm that we call home. The immensity of the poultry business is just beginning to be realized by the general public.

According to government reports the poultry and eggs produced on the farms in the United States are worth as much as the cotton crop, seed included, or the hay crop or the wheat crop. This does not include eggs and poultry produced in the towns, but just upon the farms.

Greater Than Silver or Gold

The eggs laid during the year are greater in value than all the silver and gold mined in the United States. The humble hen is becoming of some importance.

Even Wall street journals are making estimates as to the value of a hen according to her earning value. Net profit per hen is estimated at \$1.50 per year, which at 5 per cent interest would place the value of the hen at \$30, which is her true value for the value of the hen, animal or piece of property is determined by its earning capacity or income.

This surely is a new thought to most of us. The farmer devotes his time to raising grains, hay or stock to the neglect of the hens and yet we now know that poultry is as great a money maker. Many farmers claim poultry does not pay, and why? There is no house for them in many cases, so they roost anywhere and everywhere, they pick their living in summer and when some grain is given them in winter it is claimed they "eat their heads off." Eggs are laid in or under the barn and elsewhere; if enough eggs are found for family use, time has been spent in hunting them.

Their only drink may be from a mud puddle or the swill that is fed the pigs and in winter the snow answers the same purpose.

Would pigs or cows or anything else pay kept in this slipshod manner?

A Mongrel Flock

Then, too, the flock is a mongrel flock, all sizes, ages and descriptions. But it could scarcely be anything else but a mongrel flock with such care. Would the average farmer treat his pigs thus? No, but he figures that the pig is worth more. Now, we must help him to remember a hen has the earning capacity of \$30 if given any care and we must remember the average market price of her products.

How well the hen pays the woman on the farm knows. She is the one that realizes the value of the egg

S. C. Buff Orpington S. C. Black Orpington

M. Bronze Turkeys, M. Pekins Ducks and Indian Runner Ducks.

"THE BEST IN THE WEST"

Maude I. Matthews, Box 579

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N. Dak.

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Choice Stock and Fair Treatment.

ROBERT B. REED

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Amenia, N. D.

BUFF WYANDOTTE EGGS for hatching, Fowls for sale. Also twelve breeds of Fancy Pigeons. M. B. NOBLE, Hillsboro, N. Dak.

PETERSON'S BARRED ROCK

Bred to Lay and Win. Won over 90 prizes. Eggs from utility stock \$5.00 per 50 \$8.00 per 100. Mating list free. PETERSON BROS. Harwood, N. D.

HAUSMANN POULTRY FARM

Breeders of W. Wyandottes and S. C. W. Leghorns Hillsboro, - North Dakota

PURE WHITE WYANDOTTE EGGS for hatching \$1.50 for 15, \$7.00 for 100, \$14.00 for 220. E. A. Tow, Lisbon, N. Dak.

S. C. W. LEGHORNS

Prize winners' stock for sale. Eggs a specialty. GEO. A. FOWLER, Box 486, Casselton, N. D.

SILVER LACED WYANDOTTES

Thoroughbred, Wide Open Laced, Big Utility Birds, Bred for Business. Tested Fertile Eggs for Hatching, 15 \$1.50; 30 \$2.75; 45 \$4.00; 100 \$8.00. Satisfaction Guaranteed.

Anthony Elm, Lansford, N. D.

WHITE WYANDOTTE eggs for sale from good stock.

M. C. JAMES, Valley City, N. D.

POULTRY BRED FOR LAYING

See my big circular before you place that order for eggs. It will please you. It's free, 2 cent stamp for mailing. Mrs. B. F. Wilcox, Hillsdale, Wyo. Dept. 5.

WHITE AND BUFF WYANDOTTES that always win. Choice stock for sale. EGGS for hatching from pens of well-selected stock, sure to produce winners. Prices reasonable. Satisfaction absolutely guaranteed. Write me your wants. L. O. CUMMINS, Casselton, North Dakota

FOR SALE. M. B. Turkey Toms, raised from our Diploma Stock, \$5.00 and up; also Eggs from 26 varieties poultry. Catalog free. L. GULDEN, Osakis, Minn.

Rose Comb Black Minorcas

Eggs for sale, \$2 for 15 eggs.

C. WYSH, CASSELTON, N. D.

PURE BRED WHITE PLYMOUTH ROCKS Eggs at \$1.50 per 15, \$8.00 per 100. Eggs from R. C. Brown Leghorns at \$1.25 per 15, \$7.00 per 100. Eggs strictly fresh and fertile. L. G. Gemmill, Edinburg, N. D.

crop, how easily she can prepare a meal for company if she has the eggs or fowls; how much of the grocery bill they pay; how many things she could not have if the hens did not buy them for her.

The city man can keep hens, buy all his feed and make a profit. The farmer can produce his feed much cheaper than he could buy it. Over half the year the poultry can forage and pick half their living, picking up much that would otherwise be wasted.

There are other kinds of poultry that would be of value on many of the farms—turkeys, ducks and geese. They need little in shape of a house, something that keeps off the drafts and keeps them dry. The farmer is the only person who is able to do well with turkeys for they need range and with the exception of a few weeks when small they care for themselves. Ducks and geese can be raised without water except for drinking and certainly would furnish a variety of meat for the table and perhaps some for market. But it is the hen that occupies the chief place of the poultry family on the farm for the other varieties, with the exception of the Indian runner duck, do not furnish eggs during the winter months. Every November and December the scarcity of eggs is heralded far and wide and the strictly fresh egg is almost an unknown article.

Fresh Egg Supplies

The many poultry men in the towns who have to pay cash for the feed they give their poultry are the ones that supply the strictly fresh eggs and reap the reward in price, while the farmer who nearly always has most of the necessary feed in his granary and does not have to pay out cash for each meal the hen gets, is the one that should also reap the benefit of the high price.

Is it winter eggs or early winter eggs that are scarce? Is it not during October, November and December that we gather the fewest eggs and the prices go soaring high. Then early in January our daily papers and market reports tell us fresh eggs are more plentiful and the prices gradually go down. Why is it?

Hens and women are much alike in one respect that while they are engaged in getting a new fall suit they have little time to attend to other duties. It is then our usually productive birds are getting their new warm coat of feathers and all the energies they possess are directed toward that end. How can we aid biddy in this in order that she may be at her work as soon as possible? The future condition of the hen is determined by the care that she receives at this time.

Allow Free Range

If possible allow free range at the time. Give her food that aids in the making of feathers. A hopper with bran and some linseed meal kept where she can eat as she pleases will help. Sunflower seeds, rich in oil, may be fed with beneficial results. Raise some each year in your garden. Five cents worth of seed will produce what might cost you \$5 were you to buy them as that is the price per 100 pounds this year. Do not plant too closely, one plant here and there in your rows of beans, peas or even tomatoes will give larger heads than if planted all in a row. Throw a handful of seeds and watch the eagerness with which they are devoured. If you wish to keep for future use, be sure and remove seeds from the head to dry, for if left in the head they are apt to mold.

Wheat is also very useful at this time. Feed more of that than of the oats which should be one of the main grains fed during warm weather. Provide plenty of grit, oyster shells, and some meat or beef scraps if bugs are scarce, and also plenty of good clean water. Some Douglas mixture, a very useful tonic, may occasionally be given in the drinking water at this time, but be very sure to put into earthenware or wooden troughs or pails. If pails are used be sure they are kept where none of the young flock can tumble in and drown in their search for a drink.

Can't Make Up for Neglect

Do not think you can make up for any neglect at this stage, for your next winter eggs may depend upon the care given. During the moult is the hen's weakest time and disease is

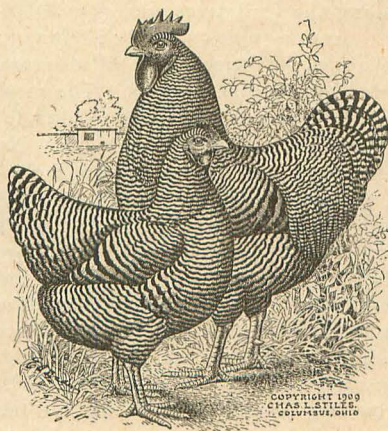
more apt to appear then than at any other time.

The pullets should by that time be nearing the age and size when they can take their mothers' places in filling the egg basket. It is upon them that we depend for most of the eggs produced during the early winter months. March, April and even May hatched pullets, allowed free range, fed good growing feeds, should be ready to help pay for their keep. But too early laying is not to be the chief aim in view. Excessive laying in young pullets means stunted hens. The hens that make the egg records are the pullets that were not forced but allowed to become well matured.

Do Not Force Early Laying

If you are just working for eggs, then you might force the pullets into early laying, but we on the farm want our birds also for breeders to raise our supply of young for the next season and we want eggs that are from well matured birds with vitality enough to hatch a vigorous chick that can grow and thrive from the time it leaves the shell.

Last season I had three pullets less than five months old start laying in September and nearly every day until Christmas time they each gave me a smaller sized egg than my birds usually produced. In December all three of these pullets moulted and did not lay again until April. Perhaps you may say those three months of eggs would offset all cost and leave a margin. Yes, but it also left stunted hens and I sold all three as culls at market price. I could not afford to use them as breeders for my trade, altho, without doubt, they themselves would produce winter laying pullets.



Harty's Barred and White Rocks

Eggs \$2.00 per setting

\$5.00 for 50

From Very Choice, Carefully Selected Pens.

H. C. HARTY,

Omamee, North Dakota

North Dakota Institutes MUST NOT STOP

On Page 2 the North Dakota Farmer makes a liberal offer to all who wish to help keep the Institutes going. Are you with us? Do it now.

Elementary Agriculture

McNeal. C. James, Editor

BIRDS

Few things in nature have given man more pleasure and have been of more interest to him than have birds. They are to be found in all parts of the world, and at all times of the year. Their habits of feeding, nesting and migration have been the subject of prose and poetry for ages. Their song has been a source of pleasure to man from time immemorial. If birds were of no use other than the pleasure they afford they would be worth preserving. Their economic use to the farmer, however, is very great. For this reason, more than any other, they should be protected.

The damage done by injurious insects was discussed in the article on Agriculture in the October number. It was said there that an authority on insects has declared that they cause an annual loss of over \$300,000,000. This is more money than is spent for all educational purposes in this country for the same time. Authority claims that injurious insects would soon destroy all plants if their enemies were held in check. One of the most efficient enemies of insects is the bird.

Not all birds can be classed as useful, because some do little good; others do much harm. These, however, are very small in number. They should be destroyed as any other pest, but no innocent bird should suffer for the sin of his cousins. Among our most beneficial birds are the robin, prairie-horned lark, meadow lark, woodpeckers, swallows, and many hawks and owls. The robin often eats fruit during berry or cherry season and for that reason is sometimes destroyed. But the harm he does in this way is far overbalanced by the injurious insects he kills. Farther south he does some harm and is slaughtered in immense numbers. In one small town in Tennessee where large tracts of cedars grow, whose berries attract robins, 120,000 robins are killed and sold each year, for five cents a dozen. The larks are the most distinctly beneficial of any of our feathered friends. They eat a great many injurious insects of the field. All know the meadow lark by his cheery note and by his yellow vest and black neck-tie. Seventy-three per cent of his food is made up of insects. The prairie horned lark is about the size of the English sparrow. He is one of the few winter residents in this state. He is usually to be found in the open field in the winter.

He is a grayish brown bird with black markings about the eyes. He feeds upon some of our most injurious weed seeds during the winter months.

The woodpeckers are often destroyed because it is thought they injure trees by pecking holes in them. This is a mistake. They do peck holes in live trees to get at the insect which is in or under the bark but they do little harm, while if the insect were left alone, he would in many cases destroy the tree. The yellow bellied sapsucker is the bird which really harms trees by pecking holes in them to get the sap. He is a migrant here, and he should be destroyed. But the red-headed woodpecker, flicker, or yellow-hammer, and the other members of this family should be protected.

The birds spoken of above catch insects from the ground or from trees but the swallows catch their food from the air while on the wing. They are very beneficial, never doing any harm. They should be encouraged to build their nests in and about the barn.

More dangerous, often, than injurious insects in North Dakota are field mice and ground squirrels. The first-named animals often destroy meadows, trees, cereals and vegetables. In Europe there have been many real plagues of meadow mice. There have been great numbers of them in America. The writer has seen much clover destroyed by these little animals, and has seen hedge fences killed outright by them. It is estimated that the loss to the nurserymen near Rochester, N. Y. during the winter of 1902, caused by mice gridling the fruit trees was over \$100,000. In one apple orchard of 480 acres in Kansas, 5000 trees were killed in one winter by these little pests. The most effective enemies of these harmful creatures are the hawks and owls. No other class of birds suffer more as a class for the wrong doings of their relatives than do these birds. The Cooper's hawk and the sharp-shinned hawk are very destructive to small birds and game birds. But the sparrow hawk, the marsh hawk and in fact all we have here as summer residents are very beneficial. The same thing can be said of the owls. These two families of birds are so often destroyed, because they sometimes are caught killing chickens. But chickens form a very small part of their diet. This is not all. Only a few hawks and owls kill chickens, but the farmers are prejudiced against all because of a few. The chief food of both owls and hawks is

mice, gophers, and injurious insects.

A very common little hawk which should be protected is the Sparrow hawk. It is a summer resident here. It is more sociable than most hawks as it stays close to dwellings and along public highways. When scientists wish to find whether a certain bird is beneficial or injurious, he has many of these birds collected over a wide range of territory and during every month of the year. The stomachs of these birds are examined to find out exactly what these birds have eaten. In this way he can make no mistake. Out of 320 stomachs of the Sparrow hawk examined, eighty-nine contained mice, while twenty-four had eaten other animals; 250 of these birds had been eating insects, largely grasshoppers, crickets, beetles and caterpillars. One stomach contained 30 crickets; another a gopher and 38 insects; another, 35 grasshoppers and 24 crickets.

The marsh hawk is a large hawk and he is often seen flying over meadows, quite low. He has a distinct white rump which aids in recognizing him. This bird feeds upon meadow mice, rabbits and ground squirrels, mainly.

Much less often seen, but as beneficial are owls. These birds fly at night so are little known by most people. They have a very peculiar habit of swallowing their food in large chunks; hair, bones, skin and all, are eaten. After the digestible part is taken from this mass eaten, the bird throws up the indigestible parts. These have been rolled into balls by the action of the bird's stomach and are called pellets. On examining 675 barn owl pellets 1123 skulls of mice were found. Fifty stomachs of the long eared owl contained 114 skulls of meadow mice.

A great many more figures might be given to show the value of these birds, but enough has been said. Such birds as the English Sparrow should be destroyed, as they are almost altogether harmful. But before one makes war upon a bird he should be sure that that bird is largely harmful. By all odds most of our feathered friends should be carefully protected.

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Any books on birds.

Home Department

POSSIBILITIES OF NORTH DAKOTA

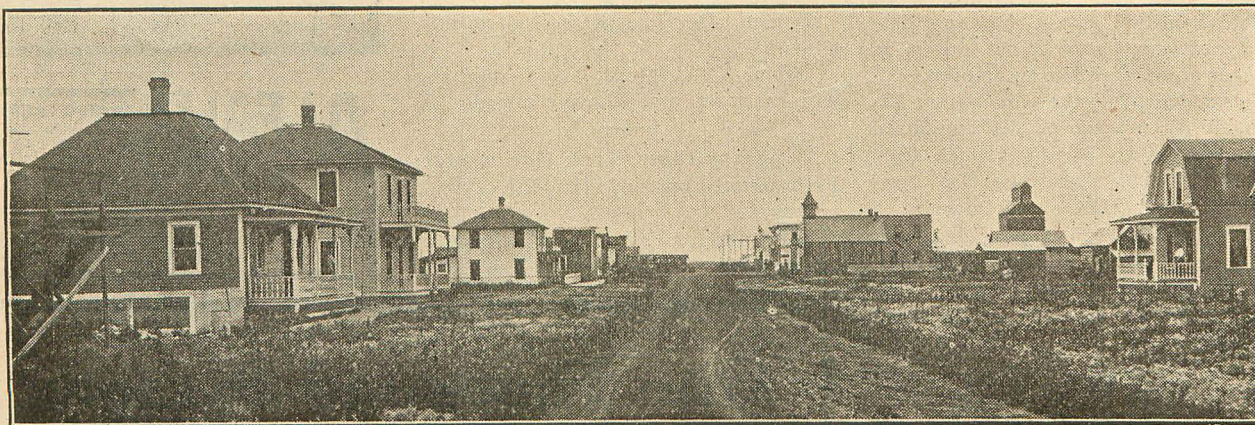
In his address at Mandan President Worst called attention to the fertility of the soil and the climate. He thought that the rainfall is just right. That if it was much heavier it would carry away plant food. The point is to save it, to keep it in the soil so that the crop can have it and not to let it run off from the surface, to evaporate and then to have a lot of weeds to pump it out. He called attention to the wonderful progress that has been made in Denmark since the state turned its attention to developing its agricultural resources. From being the most backward of the European countries it has in some 30 years risen to the front rank. It has done it by providing agricultural education for all so

the great industry of the state. By fostering the training of those who are to farm, by carrying on investigations and by carrying the results of them to the farmers. The possibilities are all here, it is merely a matter of learning how to make use of them. We must learn how to save and use the moisture economically, how to maintain the unequalled fertility of our soil. How to feed the crops which are of a high quality and how to market the high quality products that can be produced. We can not afford to fiddle along with a thirteen bushels per acre crop and an occasional crop failure when we have the soil, the climate to produce at least twice that much and to make it a sure thing every year. Then again it ought not to be sold as a grain but should be manufactured into animal products which will

pital is backed financially by Mrs. Oliver H. P. Belmont, one of the leaders of the suffrage movement in this country, and altho the two resident internes, Dr. Clara Resnick and Dr. L. M. Lubin, have both espoused the equal-franchise cause, men, as patients, are not refused admittance into the institution.

As a matter of fact, the Hempstead Hospital has been jokingly referred to as a sort of forcing-ground of suffrage. It has even been suggested by various humorous persons that it would not be an impractical scheme to gather in all the ailing anti-suffrage gentlemen the hospital would hold, and then—having securely tucked them in their little cots—to explain firmly to them that they might lie there and suffer with their measles—or what not—and not one spoonful of squills would be forthcoming to save them until they said they believed in votes for women. Such a plan has obvious drawbacks. But it does seem that it would be an ungrateful patient who left the institution unconverted, at least, to a belief in the tremendous possibilities of woman's power.

—Harper's Bazar.



Thorne, a Young Town of Rolette County

that when a person manages a farm there it is done according to the principles that underlie soil management, plant growth, animal production. To such a state of productiveness have they brought it that the exports of agricultural products amounts to \$9.00 per acre after feeding their home production. An export about as large as our total production. It is one of the best demonstrations of what the fostering of agricultural education, experiment station and farmers' institute work. On the other hand here in North Dakota the yields are decreasing in the face of the facts that we have a new soil that is very fertile while that in Denmark is mostly sand thrown up by the ocean. How shall we arrive at the vast possibilities in the state. It can only be done by applying the principles of agriculture to

much enhance the value and at the same time enrich the soil making it possible to grow larger crops to produce a larger amount of products for the market.

MRS. BELMONT'S HOSPITAL

Only two men are employed in the entire Hempstead institution; and these in sufficiently humble capacities to satisfy the most rampant advocate of political equality. The hospital managers did deem it advisable to secure the services of one man to tend the furnace and another to drive the ambulance. But with these two exceptions, doctors, internes, superintendent, nurses, cooks, and waitresses are all women.

But here we catch a glimpse of woman's magnanimity. Altho the hos-

VICTORY FOR VELVET CHAFF

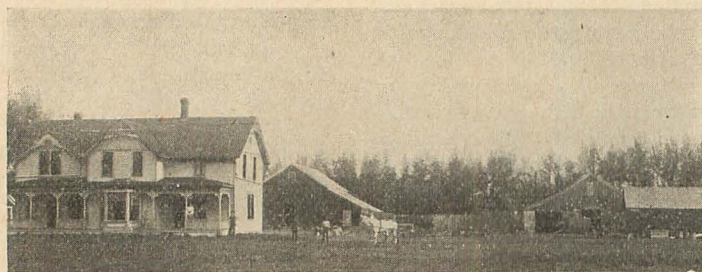
H. A. Johnson, chairman of the commissioners of the Wisconsin Grain & Warehouse commission announces that the commission has decided that the North Dakota velvet chaff wheat has been unduly discriminated against and that they will hereafter pay more for this wheat. This announcement comes as a result of a fight that has been waged for a long time between the farmers, railroad commission and agricultural college of North Dakota on one side and the eastern buyers and commission merchants on the other side.

In a new book of rules that has just been issued from the Superior office

**N. D. Institutes Must Not Stop
See Page Two**

of the commission giving the grades of grain, the following is found regarding the velvet chaff wheat.

The commission, believing that velvet chaff wheat has been unduly discriminated against, have, in conjunction with the North Dakota railway commission, and with the co-operation of Professor Ladd of North Dakota, had tests made of its relative milling value compared with the fife and blue stem varieties. These tests were made at the Fargo agricultural college under the supervision of Pro-



Home of John Chjelson, Traill County

fessor Ladd, and are unquestionably correct. We will grade velvet chaff wheat the same as the fife and blue stem varieties, but will not put it in a higher grade than No. 1 northern.

This means that the commission has changed its margin of discrimination from 5 cents to 3 cents, which they will still hold. Even tho the buyers still hold this small margin, a great deal has been accomplished for the grain grower in North Dakota. The announcement will be most welcome news to the wheat men thruout the state.

It is another victory for Prof. E. F. Ladd and the North Dakota A. C. Professor Ladd has long held that the millers and wheat buyers were discriminating against velvet chaff to the detriment of the farmers, and he has been making a fight to have it placed in its right place in the public markets.—Fargo Forum.

MORTGAGES!!!

There are a lot of people who want me to mortgage my future for their benefit, and so they take advantage of my optimism and figure out on paper immense profits for me that I do not need to make me happy and will never be realized. Don't be too cock sure of a dividend until it is fairly earned, and you have it stored away in some safe place. Let the other fellow gamble and you see how long it takes him to get rid of his money and begin again at the bottom, discouraged, if not demoralized.

HARPER'S BAZAR BUBBLES

Hudson: How did you vote?
Mrs. Hudson: Well, I wanted to vote both ways, so I paired with myself

"Not going to Alice's luncheon? But you gave your sacred word!"

"So I did, and I'd go in a minute if my dress had come home."

"Miss Emma, I love you."

"Well, now you are down on your knees you may as well tie my shoe-

He (soulfully): There are a thousand stars tonight looking down upon you.
She: Is my hat on straight?

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ALFALFA LAND 26,000 ACRES of the finest Alfalfa Land on earth. Located in McHenry County, N. Dakota. Sub-irrigated. Pure water. Good railroads. Splendid markets. Any size tracts. Only \$25.00 an acre. Easy terms. **ALFALFA VALLEY LAND CO.,** 532 Pioneer Press Building, Saint Paul, Minnesota.

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FOR NORTH DAKOTANS BY

One Hundred North Dakota Housewives

A North Dakota COOK BOOK

Why purchase a "White House" Cook Book for a North Dakota Home? These recipes have all been carefully and thoroly tested by North Dakotans and the sterner sex have pronounced them the "best ever" compiled for hungry mortals.

Price postpaid, 50 cents.

NORTH DAKOTA FARMER, Lisbon

Seasonable Receipts

Selected from "One Thousand Receipts for North Dakotans"

Cornstarch Blanc Mange

One pint milk, pinch salt, 2 rounding tablespoonfuls cornstarch, 2 table-spoonfuls sugar, 1 teaspoonful vanilla; wet the cornstarch in a little cold milk; heat the rest of the milk; when boiling add cornstarch; boil 2 or 3 minutes; remove and add sugar and vanilla. Pour into cups that have been wet with cold water; let stand until cool; turn on to desert plates; serve with cream and sugar or whipped cream.

Floating Island

One quart sweet milk, yolks 6 eggs, $\frac{1}{2}$ cup sugar; put in double boiler and cook until it begins to thicken; remove from fire and add 1 teaspoonful vanilla; have the whites beaten stiff with 2 table-spoonfuls sugar and turn over custard while it is hot; sprinkle over top shredded cocoanut, and a few small spoonfuls of jelly or jam may be scattered over the top. This makes a pretty dessert if it is put into sherbet glasses with a small spoonful of jelly on each glass.

Tapioca Cream

Three table-spoonfuls tapioca, 2 cupfuls milk, 2 egg yolks, $\frac{1}{2}$ cupful sugar, $\frac{1}{4}$ teaspoonful salt, 2 egg whites, $\frac{1}{2}$ teaspoonful vanilla; soak the tapioca in milk 1 hour; cook in double boiler $\frac{1}{2}$ hour; mix eggs yolks, salt and sugar; add tapioca mixture and cook until it thickens; cool slightly, add stiffly beaten whites; cool, flavor and serve. If Minute tapioca is used it need only be soaked a few moments.

Sponge Layer Cake

One cupful sugar, 1 cupful flour, 4 table-spoonfuls water, 4 eggs, (the whites and yolks beaten separately) 2 teaspoonfuls baking powder mixed with flour, 1 teaspoonful vanilla. Bake in 3 layers in 6-inch cake tins or 2 layers in large tins.

Sunshine Cake

Yolks of 9 eggs and 1 whole egg, 1 cupful sugar, $\frac{1}{2}$ cupful butter (scant), $\frac{1}{2}$ cupful sweet milk, $1\frac{1}{2}$ cupfuls flour, 2 teaspoonfuls baking powder. Cream the butter and sugar together thoroly, beat yolks stiff, put in milk, then add flour and baking powder and beat hard. Bake in tube pan.

Dark Layer Cake

Two cupfuls dark brown sugar, $\frac{1}{2}$ cupful butter, 2 level teaspoonfuls of cinnamon, $\frac{1}{2}$ cupful sour milk, 3 eggs, 2 cupfuls flour, 1 level teaspoonful soda, 1 teaspoonful cloves and $\frac{1}{4}$ teaspoonful salt. Bake in layers, using boiled frosting between.

Tongue Sandwiches

One cupful finely chopped tongue, 1 teaspoonful made mustard, 1 teaspoonful soft butter, $\frac{1}{4}$ teaspoonful Cayenne pepper, yolk of 1 hard-boiled egg, juice of $\frac{1}{2}$ lemon, dash of nutmeg. Mix all ingredients thoroly and spread between thin slices of bread.

Egg Sandwiches

Boil 6 eggs hard. Put in cold water to cool. Chop fine and season with salt, pepper, mustard and a little vinegar. Have thin slices of bread buttered and spread with lettuce leaves. Spread the egg between.

Salmon Sandwiches

Two thin slices of bread cut triangular and buttered; between them put canned salmon, dressed with lemon juice, salt and pepper to taste, on a lettuce leaf. These are best eaten soon after made.

Egg and Cheese Sandwiches

Yolks of six hard-boiled eggs mashed fine with $\frac{1}{2}$ pound grated cheese and moistened mayonnaise. Make a nice filling for sandwiches.

Iced Tea

Put $\frac{1}{2}$ cupful of tea in cold water in a pitcher in the morning; when wanted, strain, add cold water, and ice to taste, serve. Add more cold water to the tea leaves in the pitcher with a little fresh tea; set away, and use again. The flavor is nicer than any way I have ever tried. I keep the pitcher in the ice box and change twice a week.

Summer Drink

For farmers. Into a gallon of water stir a pint of oatmeal, a heaping table-spoonful of salt, and 2 heaping table-spoonfuls of sugar; also grate a little nutmeg into it; it should be stirred before using.

Something New in Lemonade

Half a cupful of mint leaves, for 2 lemons, 2 cupfuls of sugar and 2 of water (use only the fresh mint, not the dried). Cut the mint leaves from the stalk and wash them carefully; pour the lemon juice over them; let stand while the sugar is being heated with half the water; pour the boiling hot sugar over the mint; add the other cupful of water; allow to cool and serve with cracked ice. Strawberry juice added to plain lemonade makes a delightful drink.

Grass Stains

For white garments use tartaric acid or cream of tartar dissolved in boiling

water. Apply hot. For colored goods, rub lard on the spot when fresh; and afterward wash as usual.

To remove mildew, rub the spot with good yellow soap. Wash and while wet rub powdered chalk on it. Lay in the sun and sprinkle with water.

To take berry or coffee stains out of table linen, pour boiling water thru the stain before wetting it with soapy water.

In canning blueberries, for pies or sauce, put up 1 quart gooseberries for every 3 of blueberries and in using mix them in about that proportion more or less for variety. The flavor blends perfectly and both are very much improved.

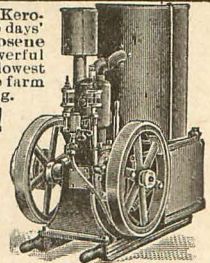
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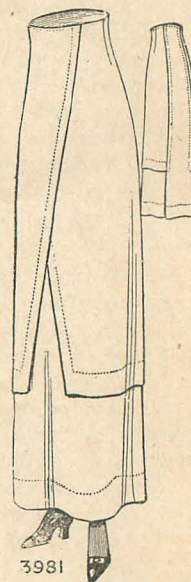
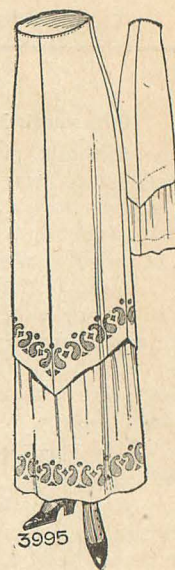
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N. D. Institutes Must Not Stop
See Page Two

HOME DRESSMAKING



3998-3670.—Lavender and white checked zephyr gauze was chosen for a smart little morning frock by the design in the center. Black satin girdle, tie and tiny buttons furnished the note of contrast. A dainty guimpe was made of white batiste embroidered with lavender dots and supplied the undersleeves, yoke and collar. A wide plait passing over each shoulder covers the armhole seams. The seven-gored skirt has a habit back and a deep hem under which is attached the straight, side plaited flounce which measures five yards at the lower edge. Striped or dotted cotton voile and the 38, 40 and 42 inches bust measure, and the medium size requires one and three fourths yards of 36-inch material. Skirt **3670** is in sizes 22, 24, 26, 28 and 30 inches waist measure, size 26 requiring four and three measure, size 26 requiring four and

three-fourths medium size requires eight and five-eighths yards of 27-inch material and one and three-fourths yard of batiste 18 inches wide for yoke and undersleeves.

3911.—This high-waisted frock was fashioned from bordered French voile in two tones of lavender. The dress is without lining, having the flounce blind stitched to the upper section of the skirt. This does away with the extra fullness from a foundation over the hips and is much cooler and more satisfactory for Summer. The sleeve-caps and sides of the body are in one and the blouse is joined to the skirt. Patterns are for 14, 16 and 18 years. If made of embroidered flouncing or bordered goods it will require 8 yards of 27-inch material for the 16-year size.

Tobacco-brown voile with darker brown satin collar and sleeve bands was

used for the stylish dress No. **3685**. The dress closes in from a little to one side and is worn over a separate guimpe with lace yoke and undersleeves. Pattern sizes are 14, 16 and 18 years; size 16 requiring four and one-fourth yards of 44-inch material.

No. 3973.—Light blue chambray makes smart little frocks, and it admits many effective but inexpensive combinations. This over dress closes to the left of center front and is cut in sizes 32, 34, 36, 38 and 40 inches bust measure. Price 15 cents.

No. 3981.—This skirt of mauve silk serge was worn with a waist of mauve silk voile over China silk and embroidered with mauve, violet and deep yellow. This three piece skirt is two and three-eighths yards wide, and is cut in sizes 22, 24, 26, 28 and 30 inches waist measure. Size 26 requires four and



three-eighths yards of 36 inch material. Price 15 cents.

A perfectly plain skirt without plait or fold often meets a special demand. The five-gored model, 3872, represented here in blue serge, has all the requisites of good style. It has straight lines, is narrow and closes at the center back, where there is an inverted plait. It is suitable alike for homespun, tweed, worsted and for silk, serge or linen. A short, hip length jacket may complete the suit or a smart Eton, trimmed with wide braid. For a silk costume it might have a peasant blouse of the same, or of self-color veiling over lace. Pattern sizes are 22, 24, 26, 28, 30 and 32 inches waist measure. Size 26 requires two and five-eighths yards of 44-inch material.

No. 3995— This skirt consists of a seven-gored foundation having a gathered flounce three yards wide over which is draped a four-piece pointed overskirt. Foulard was used in its make-up. It is cut in sizes 22, 24, 26, 28 and 30 inches

waist measure size 26 requiring four and three-fourths yards of 36-inch material. Price 15 cents.

THE NORTH DAKOTA FARMER will supply its readers with perfect fitting seam allowing patterns from exclusive Paris designs—at the given price for each pattern. For ladies upper garments give bust measure, for skirt and under garments waist measure. For misses and children give age and size. All patterns are guaranteed a perfect figure.

Send all orders for patterns to Pattern Department, N. D. Farmer, Lisbon, N. D.

WHAT ARE BRAINS FOR?

By W. C. Palmer

It has been well said that a man from his eyes down is worth a dollar and a half a day, while from his eyes up he is worth up to hundreds of dollars a day. The reason that so many people are not worth more is that they do not use their brains, being content to follow methods and practices that have been handed down, that perhaps do not meet present day conditions—at any rate can not meet them as well as what has been worked out lately. It is necessary to find out the best that is known on any subject that one has in hand; then with that as a starting point, work out new methods and practices. Oftentimes one finds a farmer who does not have a good library of agricultural books and does not even take agricultural papers, and no one has more time to read and study.

Go into the doctor's or lawyer's office and you will find a library costing a large sum, and several medical or law journals. When a difficult case comes up they ransack their libraries, going thru the books that treat of the particular subject in hand and the journals. Then they will call in fellow doctors or lawyers. They do not purpose to take any chances that it lies within their power to avoid. Does the farmer turn to his library, to the agricultural papers and to the experiment station bulletins when he has a problem? A good many do, but why no more of them? When a crop is to be grown—the best that is known on the growing of that crop should be brought into play in preparing the soil, in selecting the seed, in caring for the crop. When stock is to be raised the best knowledge available should be used in selecting the stock, in breeding them, in feeding them, in caring for them, and in marketing them. And so on with the different operations on the farm. This is where the man from the eyes up comes in, and remember that this kind of work that pays.

The farmer should have a library con-

taining the latest agricultural books, the experiment station bulletins and the agricultural papers. This will bring into his home the best that is known on the different phases of farming. One hundred dollars, or even twenty-five dollars would make a pretty good start. And if use was made of it, its teachings applied to the different farm operations, the return would be several times one hundred dollars greater each year than under the hit and miss plan. What would be even more of a remuneration would be the interest and satisfaction that comes from work well done, from being master of conditions, instead of slaves to them. We like to do what we can do well. The farmer cannot afford to take chances any more than the doctor or the lawyer. It will be his own fault if he does, as the information is to be had if he will simply work his brains.

NORTHERN PACIFIC REPLACING MILLIONS OF TIES

The Northern Pacific is this spring replacing ties all over the system in accordance with its annual program of roadbed improvement. Each spring, 12% of the ties along the line are replaced with new ones, and this spring there is being put in on all divisions a total of 2,645,588 ties.

The Company has at Brainerd, Minnesota, a tie-treating plant where are subjected to a preserving process all of the ties used with the exception of tamarack and red oak ties. This treating process consists in soaking the tie with creosote and other chemicals, which lengthens the life of the tie by approximately five years. In the case of the tamarack and red oak ties, the texture of the wood is such as to prevent the treating process from "taking" and these ties naturally have the maximum lease of life.

The total renewal of ties on the system is 12%, and the practice of the Northern Pacific is to make this renewal each year, with the result that every eight years, approximately, the ties on the system are entirely renewed.

A vast amount of rock and gravel ballast is also being placed on the right of way, especially in North Dakota and eastern Montana. Widening of right of way preparatory to constructing double track is also being pushed rapidly in those sections east of the Rocky Mountains where the system is not already double tracked. Of its total mileage between Saint Paul, Duluth and the Pacific Coast, the Northern Pacific now has in daily use, a total of 520 miles of double track and 1047 of alternate line. 455 miles between Saint Paul, Seattle and Portland are equipped with electric automatic block signals.

Among Our Abvertisers

EXPENSIVE BOARDERS

If you had boarders on your place who ate your food and never paid you a cent, you would get rid of them, wouldn't you? Have you ever figured up the amount of grain the gophers on your land eat—what they cost you to keep them?

By investigating the facts experts have proved that one gopher will eat at least 90 kernels of wheat before it sprouts and will put away for future use 125 kernels. This makes 215 kernels in all. The increase which would have been realized from these 215 kernels of seed wheat amounts to 43,000 kernels or 3 pounds. One gopher will also destroy fully plants by eating the tender sprouts and 150 heads of wheat before harvest. This makes what would amount to 320 heads of wheat which, on the basis already used, would figure one more pound of wheat lost, making 4 pounds in all. This means that the value of the grain destroyed by **only one gopher** is at least 10 cents.

This sum does not seem large, but when you figure that in a 40-acre field there will be from 500 to 1,000 gophers, and that each pair of gophers will raise from 20 to 30 more each season, you will see that the loss amounts to \$50 or \$100 on every 40-acre field.

Now the sensible thing to do is to make up your mind to put an end to this loss at once. The next thing to do is to kill the gophers quickly, economically and surely. There is a gopher poison—Nickelson's Kill-Em-Quick Gopher Poison—that's so reliable it has been used by the Forest Service of the United States Department of Agriculture in the Pecos National Forest with great success. That is an excellent test of its value to you.

Thousands of farmers who have used Kill-Em-Quick say it is the only sure gopher poison. It is so powerful that the smallest bit of it will kill a gopher stone dead. And it's simple and safe to use. Just soak some wheat in water over night. Next morning drain off the water and mix the poison with the grain so that it sticks to the kernels. Then put the grain where the pests are and the poison will do the rest. Its peculiar odor attracts gophers—they prefer it to shoots or anything else—and a mere taste kills instantly.

Mickelson's Kill-Em-Quick Gopher Poison is the result of careful experiment and study by Mr. Anton Mickelson who has been for years in the drug business in North Dakota. Many farmers told

him they could not get a poison that would surely kill gophers. Then Mr. Mickelson began to experiment with different preparations. And he made a careful study of gophers and their habits. His experiments required skill and great knowledge of pharmacy, costing a good deal of money and extending over many years. But the result was worth the effort and the expense—the discovery of the only gopher poison that is sure death to these expensive pests.

Some farmers have tried strychnine with very little success because strychnine is so very bitter that most gophers don't eat enough of it to kill them. Strychnine also has other disadvantages; a large amount of water must be added to dissolve it and a lot of grain to absorb the mixture. A gopher might eat several grains soaked in this way without being killed. Kill-Em-Quick is better than strychnine in every way. An ounce of strychnine, which usually sells for \$1.00 will kill only 874 gophers, according to tests. But 75 cents worth of Kill-Em-Quick will kill 2000 gophers. And it kills them instantly because Kill-Em-Quick is full strength on every grain—its odor and taste are attractive to gophers—and the smallest bit of it, when taken into the stomach, is enough to kill a gopher.

Mickelson's Kill-Em-Quick Gopher Poison complies with the Food and Drugs Act of June 30th, 1906, Serial No. 29689. That is a guarantee against misrepresentation. Back of this is the guarantee of the company on every box. If you are dissatisfied in any way, you get every cent of your money back. Mr. Mickelson would like to have every reader of this paper write him so that he can send you free several little folders that it will **pay you well to read at once**. Address Mr. Anton Mickelson, Mickelson Kill-Em-Quick Co., 1429 Washington Ave., No. Minneapolis, Minn.

REPATRIATED

**He Had \$400.00 in Cash in 1903;
Now Worth \$8,000**

My parents were originally Canadians from Essex County, Ontario. I was born in Munroe County, Michigan, from which place I moved to Red Lake Falls, Minnesota, where I farmed for 22 years. I sold my farm there in the summer of 1903 and in September of that year came to Canada with my wife and eight children. I had about \$400 in cash, a team of horses, a cow, a few sheep and some chickens. I took up a quarter section

of land near Jack Fish Lake, Meota P. O., and later on purchased for \$2,000 an adjoining quarter section. I have now 48 head of cattle, a number of horses, good buildings and consider my holding is worth at least \$8,000. My children have raised from \$300 to \$500 worth of garden truck each year since we have been here. I have never had a poor crop and have never had one frosted. My wheat has averaged from 25 to 30 bushels per acre with one or two years considerable more. My oats have always yielded well up to 50 bushels per acre and once or twice as high as 85. My cattle have never been stabled in winter, and do not need it. I consider that this country offers better opportunities for settlers than anywhere I have been ever. I am sure that almost any person can come here and buy land at say \$15 per acre and pay for it in one crop. My experience is that if a man farms his land in the right way he is not likely to have his crop frosted.

Most of the settlers in my district are Americans and Canadians and I know lots of them who came here with little or no capital who are now doing well, but I do not know of any who have left thru disappointment, or becoming discouraged, have returned to their former homes. EUGENE JUBINVILLE.

There are many whose experience is similar to that of Mr. Jubinvill. Secure Canadian Government literature from nearest Canadian Government Agent, and see for yourself.

SAVE MONEY ON FENCING

Our readers will be glad to know that they can save considerable money on wire fencing by sending for the latest spring prices now being quoted, direct from factory, by the Advance Fence Co., Box 17, Elgin, Ill. This company is one of the old reliable wire fence makers, and have built up a splendid reputation thru honest business methods and the excellence of their fence. It is the famous endless stay kind—a solid woven wire fence with no out ends to start rust. The endless stay wire can't slip or slide. It is made of the best open hearth galvanized wire. Being

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See Page Two**

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A SPLENDID INCUBATOR BROODER OFFER

It may come as a surprise to some of our readers who are familiar with the amazing success of the "Wisconsin" Incubators and Brooders, to learn that both of these famous machines may be secured for only \$10, and besides the freight will be prepaid any where east of the Rockies.

It is a simple matter for anyone to test the truth of these claims by taking advantage of the liberal thirty days' free trial offer to every reader of this magazine. A postal or letter addressed to the Wisconsin Incubator Co., Box 68, Racine, Wis., will bring a free copy of their Incubator Book and full particulars of their great offer by return mail.

GOOD NAME WORTH PROTECTING

The surest indication of superior quality in merchandise is when the successful article is largely imitated. The surest sign of the poorest and most unreliable merchant is one who willfully misleads his customers into the purchase of inferior substitutes in place of the genuine article actually desired.

The F. Mayer Boot & Shoe Co. of Milwaukee manufacture the well-known Mayer Martha Washington Comfort Shoes which, due to their superior merit, enjoy a big sale. Unscrupulous and short-sighted dealers, eager for bigger profits, have permitted themselves to be led into the practice of selling shoes similar in appearance but inferior in quality, representing them to be Martha Washington Comfort Shoes.

The Mayer Company have been compelled, for their own protection, to inaugurate an extensive campaign to put a stop to the unlawful use of the name and picture of Martha Washington and will punish the guilty offenders. Other reputable manufacturers have had the same experience.

The practice of substitution obtains so generally that it is well for our readers to exercise a little caution in buying supplies. See that you get what you are after and do not hesitate to turn down a merchant who tries to mislead you. Our readers are no doubt familiar with the large Milwaukee shoe house, the F. Mayer Boot & Shoe Co. whose advertisements have appeared for a long time in our publication. This Company makes one of the finest lines of quality shoes in America and their reliability is well established. They make shoes for

all purposes and for every member of the family.

In addition to the Martha Washington they also make the Leading Lady, fine shoes for women; Honorbilt, fine shoes for men, Yerma Cushion Shoes and Special Merit School Shoes.

The Mayer Company now has facilities for making 9,000 pairs of shoes per day.

A MEAT AND FOOD CHOPPER IN THE KITCHEN

How the up-to-date housewife can economize with the "left-overs"

In these days, with the cost of living so high, it becomes necessary for the thrifty housewife to economize wherever possible. There are vegetables, meat or fish left over from almost every meal which, with a Meat and Food Chopper, any enterprising housekeeper could transform into numerous dainty, tempting dishes for the following meal. How often you could enjoy those delicious Croquettes, Curries, Salads or some juicy Hamburg Steak! And so economically!

Real kitchen economy is saving. But it ceases to be economy when the standard of preparation is lowered when you must eat meat with the juice crushed out, vegetables torn to shreds, or fish mangled to pieces. Nor is it necessary to lower that standard. You should use the "Enterprise" Meat and Food Chopper. It is entirely different from any of the cheap ordinary choppers on the market. Its superior feature is its ability to cut the food without crushing, tearing, or squeezing out the juice. Here is the wonderful cutting secret. The "Enterprise" Meat and Food Chopper has a four-bladed steel cutting knife which revolves against the inside surface of a perforated steel plate. It can't tear the food!

Sooner or later every housekeeper will decide to buy a Meat and Food Chopper. Will you be satisfied with a cheap "crusher," or will you have the best and only real Meat and Food Chopper made—the "Enterprise"?

Thousands of housekeepers are sending for the new edition of the "Enterprising Housekeeper," an invaluable book containing 200 kitchen helps and hints. If you haven't received one, send your name and address with 4 cents in stamps to The Enterprise Manufacturing Company of Pa., Department 32, Philadelphia, Pa.

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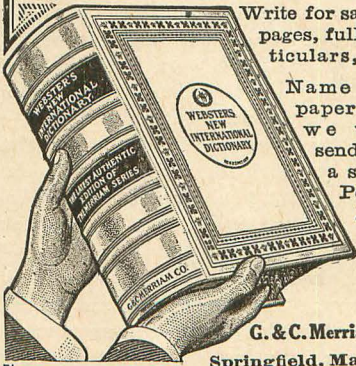
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OILS, PAINTS, AND PAINT PIGMENTS

SOME VAGARIES OF PAINT

By R. H. Forgrave, in The Modern Painter

Paint plays curious pranks sometimes. One frequently noted by master painters is that of two jobs painted with the same paint, by the same men, at the same time, and under exactly the same conditions, one will turn out a good job while the other goes wrong. Sometimes one part of a house goes bad and the other parts remain in good shape. Apparently there is no cause for these vagaries, but there must be a cause, or they would not happen.

As this is more often noticeable in repainting, the cause must be looked for in the old coats of paint. Still, if the old coats in both jobs were in good shape for repainting, why should one job fail and the other not? Perhaps one job has been repainted much sooner than the other. I think that frequent repainting, resulting in the coats becoming too thick, is a prolific cause for failure. I have often observed, when a building has stood a long time, until the old paint has nearly worn off before repainting, it hardly ever fails of being a good job. A building which has been painted with white lead and has nearly all chalked off invariably makes a first-class job when repainted. I have concluded that when a job of repainting fails in some parts and not in others the cause is attributable to the fact that the parts on which the paint has failed have not stood long enough before repainting.

It often happens that paint will blister and scale under the eaves and cornice and on parts that have been more or less protected from the wind and rain and remain good on the most unprotected parts when repainted. This proves that repainting should not be done on old paint which is still apparently in good condition; also that frequent painting does not always turn out well.

Another cause for failure is painting over old paint of which the oil was somewhat fat—not to the extent that it has not dried, or, rather, has not become apparently dry, for fat oil paint will never dry, this usually results in blistering. Sometimes the blisters will show before the painter can get a single lap done. Beware of repainting a job where you can take a putty-knife and scrape off a piece which is tough like rubber. You will surely have trouble with it.

I remember repainting a job a few years ago where the old paint seemed to

be in excellent condition for repainting. Almost instantly after the new paint was put on myriads of blisters appeared not in places merely, but all over the house, except the cornice, window frames and parts that were originally painted with another paint. On examination the paint on the sides of the house—a frame—was found to be tough like leather, while on the frames, cornice, etc., it was dry and brittle. The paint on the body of the house had, evidently, never dried out thoroly. The blisters were so bad in this instance that we were compelled to burn the old paint off before we could get any kind of a job. It was very evident that the oil in the old paint was fat.

At another time I took a contract to repaint some large elevators, the owners to furnish the material. Part of the material consisted of two barrels of oil which had been carried in stock for a long time. The oil looked good, but when we came to use it, in connection with Venetian red as the pigment and the necessary dryers, it began immediately to run like you have seen paint do, when there is too much oil in it, on being applied to a perfectly dry coat of paint. Seemingly the surface was in good condition to repaint, and in fact it was in excellent condition, but, do what we would—and we tried everything that we knew of or that was suggested—it was all to no avail. It still would run. About the time we had concluded to give it up, a tramp painter came along and asked for a job. Times were hard and we were compelled to refuse him. He noticed the trouble, and said that if we would hire him, he would fix the paint so it would work. We accepted his proposition. The remedy was coal oil. Then it worked as nicely as any paint. The job turned out first-class. Moreover, it looks as well today as the majority of jobs not over a couple of years old, and it has been done for over twenty years.

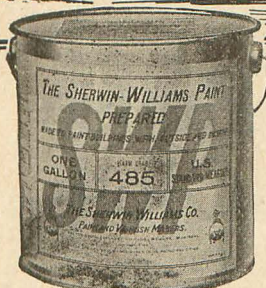
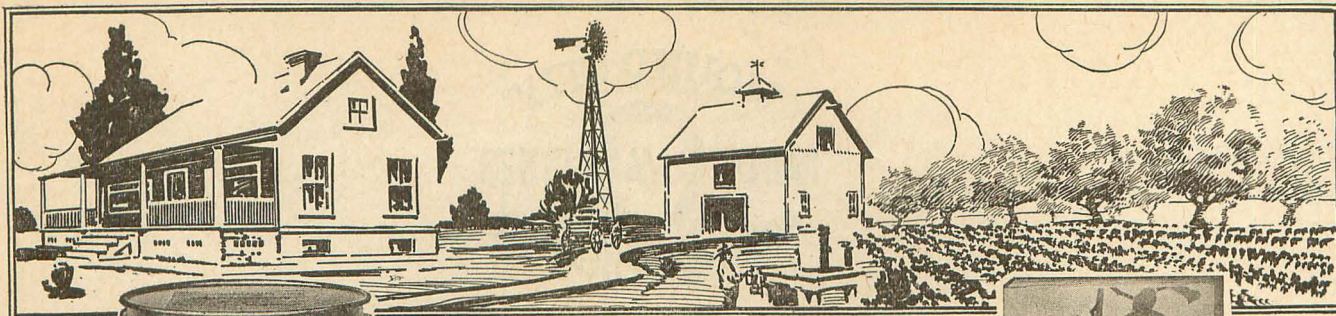
In another instance I had an old barn. The owner wanted to get it done as cheaply as possible. Looks for selling purposes was all he required. He had concluded to use an outside calomine—one of the patent ones which were at that time just making their appearance. We prevailed on him to use a dope oil paint instead. I had a lot of oil putty and some other stuff in the shape of old dried-out oil lead, paint skins, etc. I dumped the whole into a barrel and covered it with a strong solution of sal-soda. I allowed it to stand, frequently

stirring, for several days, until the whole mass was dissolved and of the consistency of thick paste. I thinned this to a working consistency with raw oil. It required less oil than I supposed it would. Evidently I did not have enough of sal-soda in it to liven it as too much will do. We hurriedly applied two coats. Seventeen years later I met the former owner—the one who had the job done. He asked me what I had used in doing this work, saying he would like to have some more work done with the same paint, as it was still in fair condition, and looked better than the adjoining farm-house, done several years afterward with what was said to be a first-class paint.

When, a few months after repainting, the paint being perfectly dry, it comes off bringing the old paint with it in large patches, this shows that the old paint was loose. It was loose at the time of repainting. A tap here and there will tell if paint is loose. The only remedy is to burn the old paint off. If it is scraped off, leaving patches, the job will be rough. In this case the old paint will have been found to have dried very hard. Too much drier was used probably. Sometimes this will occur when the paint has been applied too stout, which prevents it from properly entering the grain of the wood. When necessary to apply stout paint to unpainted wood, it should be well brushed into the pores. I think the best work is possible with paint mixed rather stout, if well brushed out and into the pores. This is observable in paste woodfiller. As it becomes essential to thoroly fill the pores particular effort is made to do so, resulting in every portion of the wood having the filler well pressed in. It is very seldom filler comes out of the wood. The varnish may be removed, but the filler remains, unless a strong alkali is used, which so raises the grain that the surface is spoiled. This is the principal drawback to refinishing natural wood. On the other hand, if the paint comes off, bringing the old paint with it immediately after, or before the paint is dry, it is usually because the old paint has never thoroly dried.

No matter what happens, the last paint to be applied invariably has to take the blame. There are several things to take into consideration before beginning to do a job of repainting. Always look after the condition of the surface. If the paint is hard and loose, remember that no paint will penetrate it and fasten itself to the wood. If the surface is not in good shape it should be put in shape, either by burning off or by some other method, according to conditions.

N. D. Institutes Must Not Stop
See Page Two



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A house or barn that is kept painted will last a lifetime, while the average house or barn if not painted will lose its value in twenty-five years. Woodwork ex-

posed to the air absorbs dampness, checks and cracks and decays. That's why a building painted with **Sherwin-Williams Paint, Prepared**, lasts longer and looks better than a building that is not painted or is painted with a cheap, shoddy mixture. Apply a paint film of SWP and insure the long life of your farm buildings. Write for information and name of our agent in your town.

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It contains as much reading matter during the year as the First, Second, Third and Fourth Readers combined. It is more eagerly read by the pupils than any book. It furnishes choice fresh reading every month. It contains just the selections suggested by the Course of Study. It is classic. Its personality is magnetic.

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Why "Mound City" House Paint HOLDS Its Gloss

WHY do you see so many dull,
faded-looking houses?

The trouble with such houses is that they are Oil-hungry. They are painted with a paint that has not enough Linseed Oil in it—a paint that never *could* have enough Oil in it on account of the character of the pigments used.

The best Paint *must* do two things. It must preserve and beautify. Do you know that Linseed Oil is *the* great preservative in Paint and that if it were not for the sake of appearance, you could give your house a coat of pure Linseed Oil, and it would be protected?

The solid part of Paint (Strictly Pure White Lead, Strictly Pure Zinc, and, in some Paints, baser metals) acts as beautifier only.

Strictly Pure Zinc absorbs more Oil than any other pigment and that is the reason for its use in Horse Shoe Paint. WHITE LEAD is used for its covering qualities, and ZINC for its *Oil-carrying* capacity.

And Oil-carrying capacity is what your Paint *must have* if your property is to be protected.

Horse Shoe Paint, while it covers and beautifies the surface thoroughly, is made of pigments that carry so much oil, that the *first* coat satisfies the oil-hunger of the wood leaving the second coat to gloss, harden, protect, and beautify.

That's why Mound City Horse Shoe Brand House Paint HOLDS its gloss.

Mound City Paint & Color Co.

GOOD MAKERS OF GOOD PAINTS

St. Louis, U. S. A.